The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LII CHICAGO, ILLINOIS, JANUARY 16, 1909 NUMBER 3

Original Articles

BILIBID PRISON SANITATION *

EDWIN C. SHATTUCK, M.D.
MANILA, P. I.

The subject of prison sanitation is such a comprehensive one and presents so many points for consideration that I have thought best in the present paper to discuss briefly such subjects as have seemed most pertinent.

Unless there is complete isolation, a thing usually impossible, the population in the vicinity of a prison or other public institution is endangered by insanitary conditions or epidemics occurring in the institution. On the other hand, it is frequently the case that the only way by which infection can gain an entrance to the institution is from or through the neighboring population. It is clear then that it is to the interest of both to cooperate to prevent conditions inimical to public health. Since we know that sometimes in spite of every precaution epidemics do arise, the rational procedure is to join hands in the work of stamping them out.

The remarkable reduction in the mortality of Bilibid Prison during the calendar year 1907 led me to undertake the writing of this paper, with the idea of collecting such data as might suggest the probable reason for the improvement.

From the Spanish archives it is learned that the prison was originally constructed (1863-1866) of poor materials and by cheap labor under an unscrupulous contractor who for his dishonesty in this matter was the first criminal to be confined in the jail which he had built. As a result of this faulty construction the sanitary condition of the building was poor from the first and has continued to be so. It will thus be seen that Bilibid prison was never considered a model of sanitation. When I first saw the place in 1905, some of the building had been repaired; a new style shutter opening outward from below had replaced the old Spanish shutters. A cement or tile floor, one to one and a half feet above the level of the court had taken the place of the old wooden floors. Some filling in had been done, but overflowing from the estero[1] still occurred. Several buildings had been rebuilt and many shops and storerooms added outside the wall and the administration building enlarged. Many improvements on general lines had been made. There are to-day fifteen buildings used as prisoners' quarters, one of which was finished during 1906-7.

Sanitation, however, advanced very slowly. The low position of the prison and the low-lying ground between it and the estero caused a regular overflow during rains. During the first eight months of my service I could not cross the grounds to the hospital without danger of going over my shoes in the soft mud. The outlet of a large surface drain which formerly emptied into some marshy land back of the rear wall was moved so as to empty directly into the estero. New drains were laid and made deeper than the old ones. The ground was filled in so that the general level was raised from six to eighteen inches, or more. From its beginning, Bilibid was without a hospital worthy to be designated as such. The hospital (Figs. 1, 2 and 3), which I am told was built originally of scraps, is at present situated in the rear of the presidio grounds at their lowest level. Up to September 5, 1906, the hospital grounds, the adjoining enclosure and the floors of the presidio cells had not been filled in. On that date I made the following recommendations: 1. "That the ground in the enclosure and the floor of the bartolina[2] be raised eight inches and the canals be built to correspond." 2. "That ventilators be placed in the roof of cells 1 and 5." These cells had been found to have practically no movement of air. The repairs were made shortly afterwards. A window with a grating was also added to the prison bakery to provide absolutely needed ventilation.

In the latter part of 1904 the prison hospital was divided for the purpose of isolating the tuberculosis patients. A building was rented on Calle Marquis de Comillas near the Ayala bridge to be used as a hospital for tuberculosis and designated Hospital B. (Fig. 4.) Among other advantages it has a yard shaded with trees. During the last two years the tuberculosis hospital has had its own physician and personnel.

Figure 5 gives a view of the prison showing most of the buildings as they are to-day. The average length of each building is 165 feet and the width 20 feet. The height is 15 feet, with an eight-foot drop from roof. Each has approximately 62,700 cubic feet of air space and is occupied by 249 prisoners. This would be 251 cubic feet of air space for each man.

The cubic feet of air space for each individual in the prisoners' quarters has varied with the population in the last two years between 200 and 300. It is evident that the farther it goes below the latter figure the more prevalent tuberculosis and pneumonia are likely to be.

It is necessary, both from an administrative and a sanitary point of view, to furnish all able-bodied prisoners some occupation. Prisoners are provided with work in various shops and also on the roads. There is also a prison band. Practically all work on prison grounds and buildings, construction, etc., and much of the clerical work is done by prisoners.

The ration is closely approximated in the following table showing the items and quantities for five consecutive days beginning February 18, 1908.

* Read at the Fifth Annual Meeting of the Philippine Islands Medical Association, 1908.

1. A small creek into which the tide flows.

2. Cell-house.

Quantity per man.	Feb. 18. oz.	Feb. 19. oz.	Feb. 20. oz.	Feb. 21. oz.	Feb. 22. oz.
Beef.	6	6	..	3	6
Pork.	..	..	6	..	..
Fish.	..	..	..	3	..
Camotes[3].	3	2	..	..	1
Mongos[4].	..	1	1	½	1
Potatoes.	2	3	6	3	2
Squash.	1	..	..	..	1
Onions.	1	1	..	..	1
Tomatoes.	..	..	..	2	..
Bread.	12	12	12	12	12
Rice.	18	18	18	18	18

The drinking water, which is furnished by a distilling plant, is kept in barrels or cans having a locked cover and spigot, and prisoners are forbidden to drink tap water.

A daily sanitary inspection is made by the hospital steward, who reports anything calling for further investigation. Immediately on the appearance of a case of a disease that might become epidemic, such as cholera, plague or smallpox, the patient is isolated, the building quarantined and disinfected, and all the prisoners in it are bathed in a bichlorid of mercury solution.

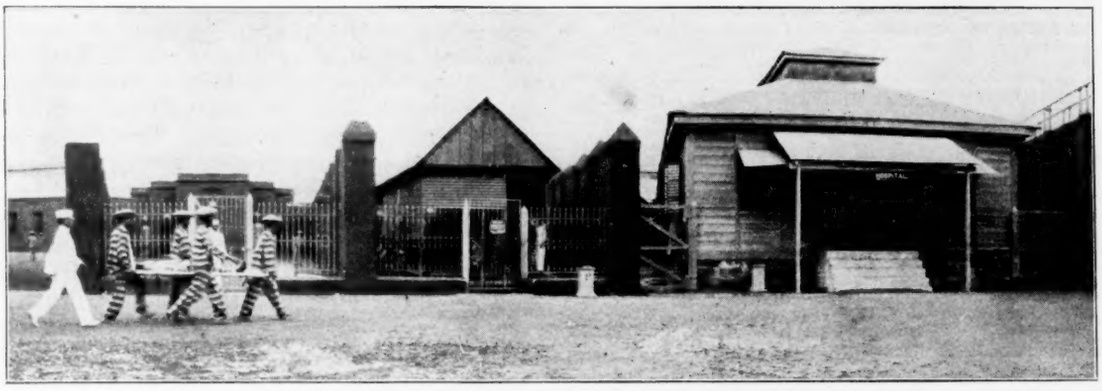


Fig. 1.—Entrance to the hospital at Bilibid prison, showing the litter bearers taking a patient to the hospital.

Fig. 2.—Operating room of the hospital, Bilibid prison.

Their clothing also is soaked in the same kind of solution. Cholera patients are treated at Bilibid. Smallpox patients are transferred to the contagious ward at San Lazaro Hospital, and all prisoners in the building and all who have come in contact with the disease are vaccinated. After these measures have been taken there is no further quarantine.

3. Native sweet potatoes.
4. Chinese peas.

All latrines and garbage-cans, as well as the night tubs in the buildings are screened and made fly-proof. The night tubs are emptied daily; the garbage also is taken away every morning. Wooden cuspidors with covers are placed about the grounds and prisoners are required to use them. These cuspidors are cleaned daily and disinfected once a week.

The prison grounds are sprinkled daily, which keeps down the dust and helps to some extent in preventing diseases of the respiratory system. The buildings, formerly painted red, and later white, were finally painted a slate color which prevents to a great extent the reflection and glare of sunlight and lessens the tendency to diseases of the eye.

Before any patient is discharged from the hospital he is given a bath in mercuric chlorid solution and, unless for any reason he is liberated, microscopic examination for intestinal parasites and for tuberculosis must prove negative. His bunk and bedding are disinfected.

Fig. 3.—Convalescent ward at Bilibid prison. This is nothing more than an open-air shed with raised wooden floor.

The hospital is cleaned daily and disinfected once a week. All cuspidors and similar utensils in the hospital, night tubs, latrines, drains, etc., are disinfected whenever found necessary.

The chart in Figure 6 shows the mortality per thousand in Bilibid during the calendar years 1902-1907 in-

clusive. In 1902 an epidemic of beriberi (Fig. 7) raged in the prison, reaching its highest point of 253.7 deaths per thousand, during the month of October. This epidemic has been reported by Dr. Louis H. Fales,[5] who was attending physician to the hospital at that time. He attributes the epidemic to a deficiency of potash salts in the ration. There are still cases of acute and latent beriberi in the prison, although deaths from it are rare.

I have noticed that whenever the health conditions of Manila have made it necessary to prohibit the sale of certain vegetables (such as tomatoes, etc.) or whenever for any reason the vegetable component of the ration is temporarily reduced, not only do we have more cases of beriberi, but there is more sickness in general.

The annual mortality from the disease for the years 1902-1907 inclusive, is as follows: In 1902, 114 per thousand; 1903, 7.4 per thousand; 1904, 2.8 per thousand; 1905, 3.8 per thousand; 1906, 6.4 per thousand, while 1907 is conspicuous by the absence of deaths from this cause. The number of cases treated during 1906 were 121, while only 24 cases appear on the records of 1907. I attribute this decrease mainly to improvement in the ration, which now contains native vegetables and Chinese peas or mongos.

During the year 1904 the mortality appears to have gradually increased, not from any one cause but from all causes. Tuberculosis, pneumonia and amebic dysentery all combined to swell the death rate, and in December an outbreak occurred during which the Gatling gun claimed twenty-one victims among the prisoners who were attempting to escape. These cases, if deducted from the annual mortality as deaths due to violence would reduce slightly the annual mortality.

In 1905 there was a slightly lessened mortality from pneumonia, with about the same number of deaths from amebic dysentery, and almost double the number from tuberculosis. This had increased the mortality in July to 137.8 per thousand. In August, Asiatic cholera of a severe type appeared coincidently with an outbreak of cholera in Manila, and caused 19 deaths, the mortality for the month being 191.5 per thousand. In September there were ten deaths from cholera and thirty-seven from tuberculosis, which with the deaths due to other causes, made seventy-three for the month; a mortality of 237.9 per thousand. At this juncture the Bureau of Health was placed in charge of the sanitation of the prison. The mortality steadily decreased during October, November and December. For the year, however, it was 115.6 per thousand.

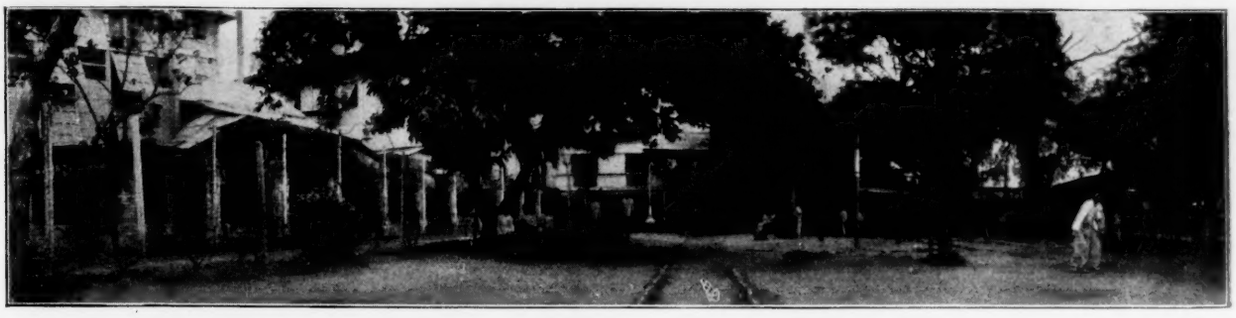


Fig. 4.—The tuberculosis hospital (Hospital B) at Bilibid prison, situated on the banks of the Pasig River near Ayala bridge.

Fig. 5.—General panoramic view of Bilibid prison, showing most of the buildings as they are at the present time.

In reviewing the mortality of 1903, my own experience moves me to admiration of Dr. Fales' results after the epidemic of beriberi had been controlled. The unfavorable conditions at that time, the absence of a hospital kitchen, the low ground and poor drainage about the hospital, the exposure of patients during storms, and overcrowding, all tend to reflect credit on his work.

On January 1, 1906, my own work began. The mortality runs about as it did in 1903. Tuberculosis was distinctly lessened as a factor in mortality, while pneumonia and amebic dysentery were somewhat reduced. The mortality for the year was 68.10 per thousand. In 1907 a decided improvement occurred all along the line, there being only sixty deaths during the entire year, and forty of these were due to tuberculosis.

In the chart shown in Figure 7 I have endeavored to show the part which is played by tuberculosis, pneu-

5. Beriberi, Its Etiology and Prevention, THE JOURNAL A. M. A., March 2, 1907, xlviii, 776.

monia and dysentery in the prison mortality rate. Among these three, tuberculosis is easily the leader. In 1902 it caused 7.2 mortality per thousand; in 1903, 13.1; in 1904, 25.5; in 1905, 52.8; in 1906, 19.5 and in 1907, 11.5. Its rise was coincident with the increase of the prison population and consequent overcrowding. Although there are fewer deaths at present, I am of the opinion that the disease is not decreasing. With increased care in the isolation and treatment of cases, there is a small percentage of cures and in other cases life is prolonged.

Pneumonia is a disease which, as the matter now appears to me, would hardly be looked for in the Philippines. Outside of Bilibid, I have seen but two cases among adults in eight years' practice. In the prison it is as much to be reckoned with as tuberculosis and in many cases it seems to be of a septic type. Its mortality range for the consecutive years 1902-1907 inclusive, has been, respectively, 9.9, 13.8, 21.2, 13.1, 10.4 and 1.7 per thousand.

Amebic dysentery ranks next in importance as a cause of death. Its influence shows as follows in the years under consideration (1902-1907): 1.6, 5.7, 10.9, 12.2, 5.6 and 0.9.

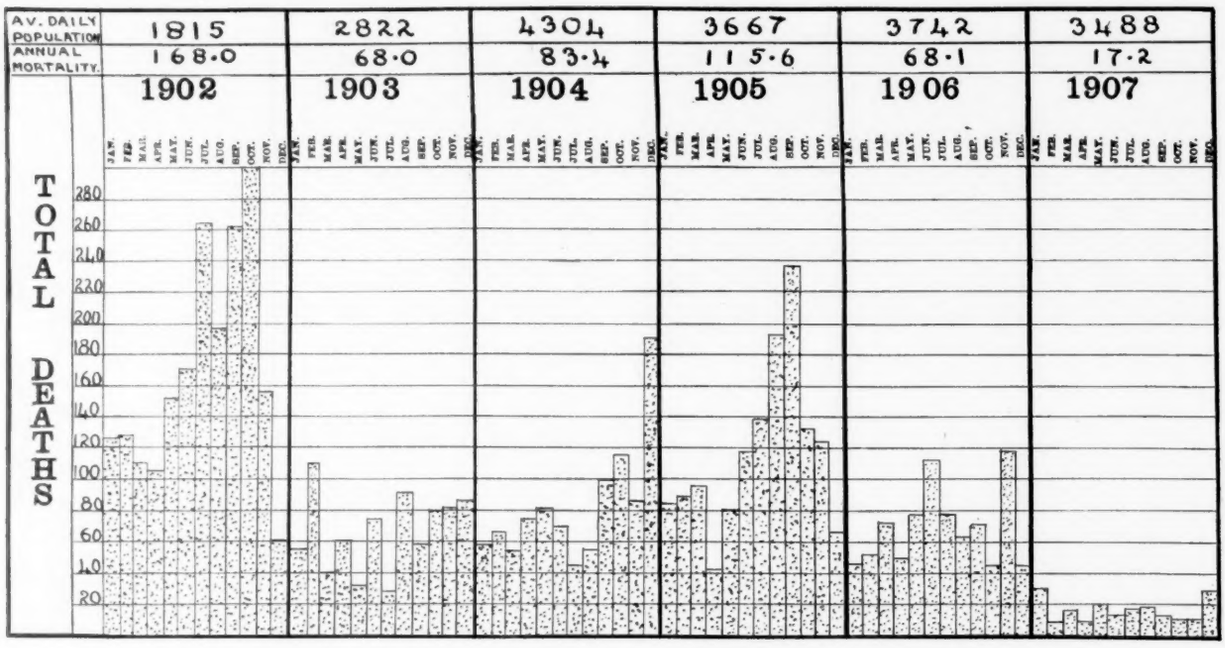


Fig. 6.—Chart showing mortality per thousand in Bilibid prison during the years 1902-1907, inclusive.

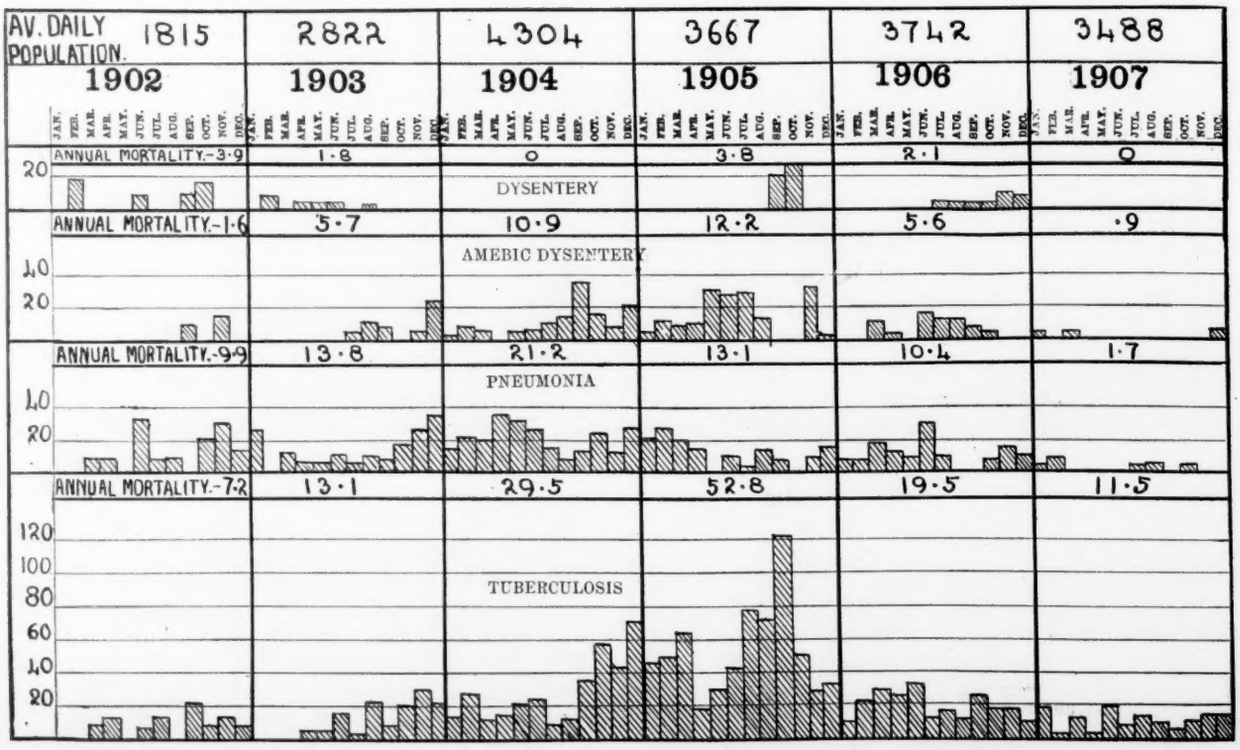


Fig. 7.—Chart showing mortality per thousand from dysentery, amebic dysentery, pneumonia and tuberculosis in Bilibid prison during the years 1902-1907, inclusive.

These figures and the nature of the disease seem to suggest that the mortality may be largely preventable. I shall refer to this further on in the course of this article.

Acute dysentery has appeared from time to time but never in epidemic form. I know of no bacteriologic work done in these cases and can not say to what organism they are due. It will be noticed that in 1904 and

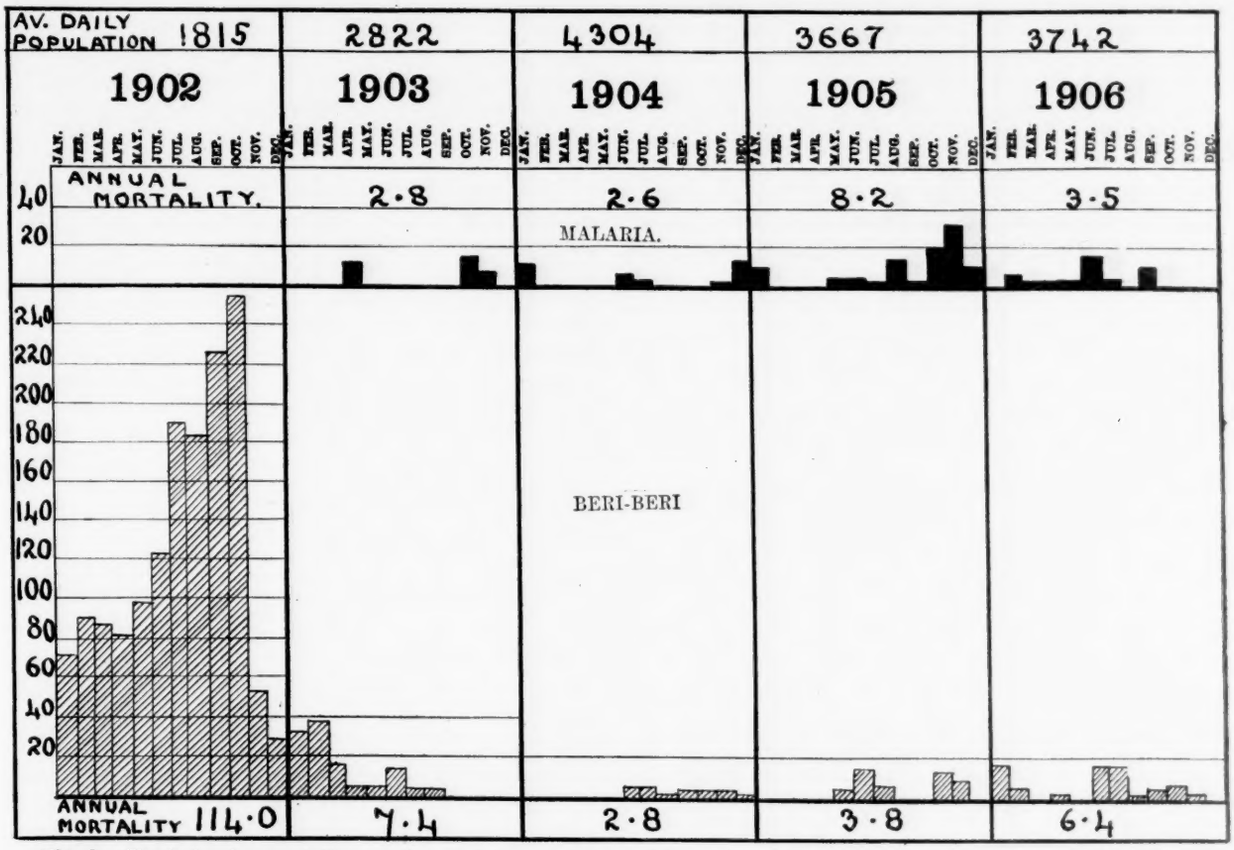


Fig. 8.—Chart showing mortality per thousand from malaria and beriberi in Bilibid prison during the years 1902-1906, inclusive. There were no cases of either of these diseases during 1907.

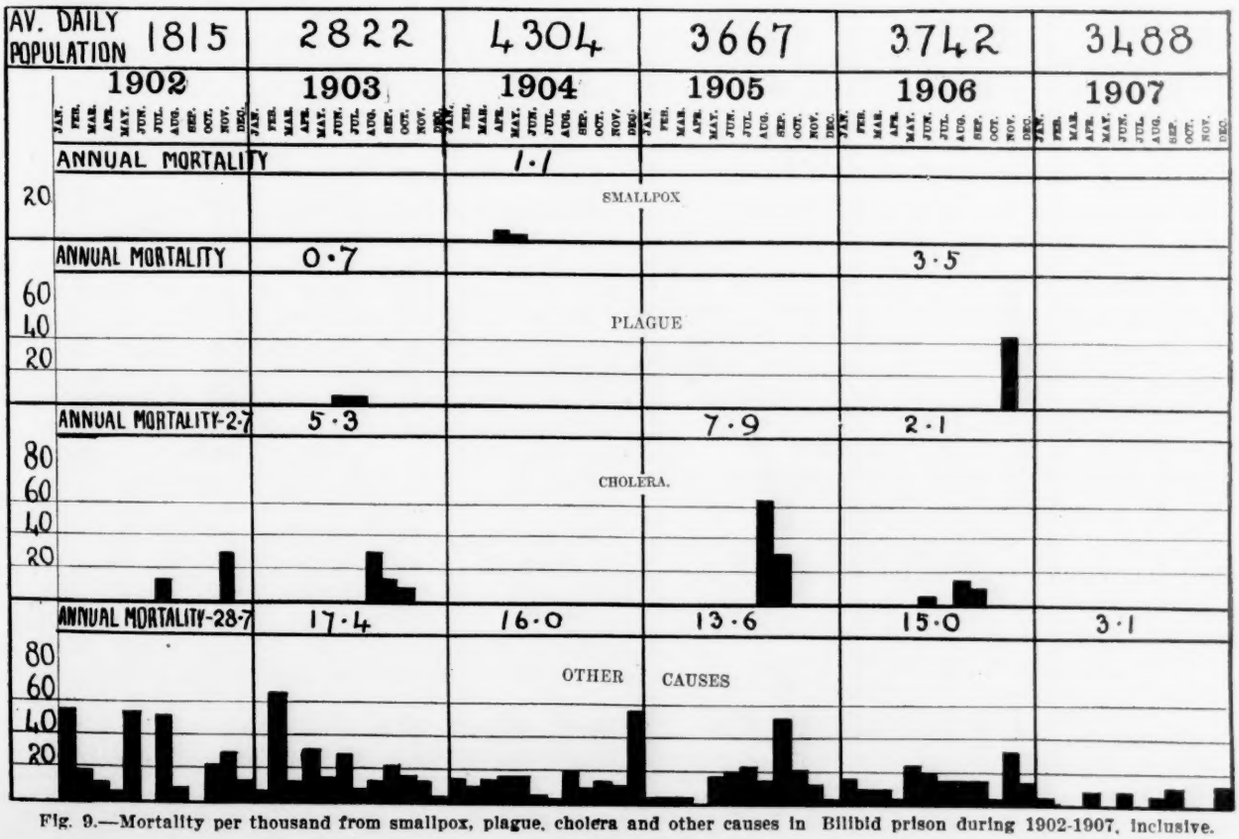


Fig. 9.—Mortality per thousand from smallpox, plague, cholera and other causes in Bilibid prison during 1902-1907, inclusive.

in 1907 the disease claimed no victims. In 1902 the mortality was 3.9; in 1903, 1.8; in 1905, 3.8 and in 1906, 2.1 per thousand.

The next disease that causes a marked mortality is malaria. (Fig. 8.) In 1902 there were no deaths; in 1903 the mortality was 2.8 per thousand; in 1904, 2.6, in 1905, 8.2, and in 1906, 3.5. In 1907 there were no deaths from malaria.

The chart in Figure 9 shows that only in one year of those under consideration, namely 1904, were there any deaths from smallpox in Bilibid. These were in April and May, two deaths occurring in each month. During my service it has been the practice to transfer all cases of smallpox to the San Lazaro contagious wards. Among those so transferred I know of no deaths having occurred. In 1903 there were two deaths from plague, one in June and one in July. In November, 1906, there were thirteen deaths from plague. These deaths, with one exception, occurred among 24 cases accidentally inoculated by an investigator from the Bureau of Science, as reported by Freer.[6] How the other case originated is not positively known, but the patient was in a bed adjoining one of the other patients before the disease was recognized and the cases isolated. It is probable he received the infection from one of them. He had no marks of a primary local infection. It is considered noteworthy that under the circumstances no epidemic occurred nor any infection other than as above stated. It seems to prove that plague is not actively contagious as was formerly supposed.

In 1902 there were five deaths from cholera, one in July and four in November. In 1903, cholera reappeared, in August there were eight deaths, in September four deaths and in October three deaths. The annual mortality was 5.3 per thousand. In 1904 there was no cholera. In 1905 cholera appeared and in August caused 19 deaths, and in September 10 deaths. The annual mortality from the above was 7.9 per thousand. In 1906 cholera appeared in June, causing one death. In August there were five deaths and in September two, the annual mortality being 2.1 per thousand. In 1907 there was no cholera in Bilibid.

Deaths from various causes unclassified caused a mortality of 28.7 per thousand in 1902: 17.4 in 1903; 16.0 in 1904; 13.6 in 1905; 15.0 in 1906 and 3.1 in 1907. A point to which I wish to call attention is that in 1907 there were no deaths from beriberi, malaria, acute dysentery, cholera, plague or smallpox. There were six deaths from pneumonia, three from amebic dysentery, forty from tuberculosis and eleven from miscellaneous causes. The total mortality for 1907 may be summed up as follows: Tuberculosis, 11.5 per thousand; pneumonia, 1.7 per thousand; amebic dysentery, .9 per thousand; miscellaneous, 3.1 per thousand. Total, 17.2. Executions are omitted from this mortality.

RECAPITULATION

Year.	Average. daily population.	Mortality per thousand.
1902.	1,815	168.0
1903.	2,822	68.0
1904.	4,304	83.4
1905.	3,667	115.6
1906.	3,742	68.1
1907.	3,488	17.2

The mortality for the city of Manila during the calendar year 1906 was 41.07 per thousand; during 1907 it was 32.59 per thousand.

6. Accidental Inoculation with the Virus of Plague, THE JOURNAL A. M. A., April 13, 1907, lxviii, 1264.

In prison sanitation, the first requisite is a hospital of some kind and provision for the isolation and care of the sick. Rest in bed, a bath, easily digested food—these alone do much. I believe that quinin, properly used, will almost eliminate malaria as a mortality factor. It certainly should be promptly used in malarial cases. A case of pneumonia is not so simple a problem. I have read about specifics but have not found one. We have used symptomatic treatment, quinin in tonic doses, tincture of veratrum viride or dry cups to relieve congestion, and cold baths for high fever.

I was much dissatisfied with the results of the quinin enema treatment in amebic dysentery. I saw on the morgue table, on different occasions, at least two cases of perforation of the colon which might have followed the careless use of the rectal tube. Most of the hospital attendants being native prisoners, a high degree of skill can hardly be expected of them. I decided finally to abandon the quinin enemas and to try internal treatment, alone. I prescribed as follows:

℞.	gm. or c.c.		
Simaruba pulvis	3		gr. xlviii
Benzonaphthol	3		gr. xlviii
Bismuth subnitratis	8	or	ʒii
Pocion gomosa[7]	200		ʒviss
Syrupus krameriæ	30		ʒi

M. et Sig.: A tablespoonful every three hours, and 100 c.c. of a 50 per cent. sodium sulphate solution every second or third day.

This, apparently, has reduced the mortality from amebic dysentery to the vanishing point. The three deaths from this disease which occurred during 1907 were treated by other methods than that described. In very acute cases I have given warm saline enemas every two hours until the symptoms are relieved. Enemas of tannic acid are also advisable if hemorrhage is marked.

An observation developed the fact that a large number of the stools of the prisoners contained ova of intestinal parasites, a systematic investigation was undertaken. Over 17,000 examinations were made.

We had no room for these patients in the hospital, but, after consulting with the Director of Prisons, it was found practicable to build a small ward next to the main hospital, which would accommodate 60 to 80 patients by having them sleep on the raised wooden floor. This was used for the treatment of ankylostomiasis. All patients found infected have been treated in this ward until found negative once or twice on microscopic examination. It has come to be popularly known among the prisoners as the "hungry ward," because on the alternate days on which treatment is given, they get no food. Ascaris cases were treated in the convalescent ward, while amebic dysentery and other intestinal diseases were treated in the main ward.

The eradication of intestinal parasites, so far as possible, I believe to be of primary importance. Their toxins slowly poison the system; the local lesions made by them afford means of entrance for pathogenic bacteria. I attribute the improved health of the prison largely to the results of this systematic work. Other factors were operative at the same time. Formerly many of the prisoners feared the hospital, thinking if sent there they were sure to die. This I believe has entirely changed. There are of course malingerers who must be excluded when detected. The following table shows the cases of intestinal parasites treated during 1906 and 1907:

7. Pocion gomosa is a mixture of acaciæ pulvis, 2 grams; syr. simp., 100 grams; spt. aurantii flor., drops 10.

Disease.	1906			1907		
	No. of cases.	No. of deaths.	Case mortality.	No. of cases.	No. of deaths.	Case mortality.
Ankylostomiasis	360	..	..	2,575	..	..
Amebic dysentery	215	21	.10	810	3	.04
Tenia saginata, solium, etc.	..	..	..	32	..	.
Hymenolepis nana	..	..	..	3	..	..
Hymenolepis diminuta	..	..	..	1	.	.
Ascaris	264	..	..	893	..	..
Balantidium coli	..	..	..	30	..	..
Opisthorchis sinensis	1	..	..	11		..
Oxyuris vermicularis	.	..	..	42	..	..
Schistosoma japonicum	..	..	..	20	..	
Paragonimus Westermanii	4	1	25	18	..	..

Among the most important needs of the prison to-day may be mentioned: More cubic air space to each man in the quarters, a hospital, a modern sewerage system, and a sanitary system of bunks. All these have been appropriated for.

There are three possible explanations of the reduction in the mortality during 1907: first, a favorable season and improved sanitation; second, prompt diagnosis and treatment of diseases in general, but especially of intestinal parasites; third, exceptionally fortunate results in general treatment; fourth, a happy combination of the first three.

I am persuaded that those who know the actual conditions under which the work has been done will wonder that so much has been accomplished, my attempt to explain it notwithstanding.

A CASE OF ACUTE HUMAN GLANDERS*

F. ROBERT ZEIT, M.D.
CHICAGO

This case of acute glanders in man illustrates that it is comparatively easy to distinguish the disease from symptomatically similar conditions. Before the pustular eruption appears the case is generally suspected to be typhoid fever, septicemia, croupous pneumonia or articular rheumatism. When the pustular eruption appears smallpox or a pustular syphilid is most commonly suspected.

The small number of cases reported in the literature of acute glanders in man has given rise to the opinion that the disease is rare and human susceptibility to infection small; but it is quite probable that fatal cases of glanders are reported under other causes of death, notably smallpox.

Among laboratory workers numerous deaths from infection by the *Bacillus mallei* have been reported because the nature of the infection was properly determined. It is to be presumed that the infectious material, fresh from the nose or farcy bud of a horse, is no less virulent than the various subcultures and strains used in the laboratory experiments.

The case which I report occurred in the practice of Dr. Bayard Holmes, Jr., to whom I am indebted for the history, having been called to examine the case when the suspicion of smallpox arose.

Patient.—Male, aged 45, robust build, 6 feet 2 inches tall, weighing 185 pounds, a teamster in a large department store stable.

Illness.—This began with a thin watery discharge from the nose, pains in the left shoulder and a severe chill of one-half hour's duration, followed by extreme weakness in his lower extremities. The patient remained at home during the following week, complaining of sharp shooting pains in his left shoulder, increasing weakness and dull headache with a slightly blood-tinged purulent nasal discharge. He had some fever at night and always felt better in the morning. During the next week he developed typhoid symptoms, became delirious at night, had high fever, much headache, diarrhea and pain in the left shoulder. He had some swelling and pain in left leg, some rigidity of the muscles of the neck, increased excitability of the reflexes and normal morning temperatures. A few vesicles, containing clear serum, appeared on his left shoulder.

First Examination.—Dr. Holmes was called to see the patient on the twenty-sixth day after his initial chill and found him lying in bed, with his head slightly drawn back, the eyes staring at the ceiling, the mouth open, the limbs moving in a muttering delirium, tongue dry and red at the tip and heavily coated at the base, the nose obstructed. The left shoulder was covered by a large number of pustules, and Dr. Holmes also noticed a few pustules on the scalp and right wrist of the patient at that time. The heart was fluttering, markedly intermittent, missing as many as ten beats at times. There were no murmurs. The lungs and spleen were negative; the abdomen tympanitic. There was a very painful, small, hard and uneven nodule, about the size of a 50-cent piece, over the tibia, just below the left knee, which could not be palpated without rousing the patient from his delirium, to beg for relief from the pain. The evening temperature per rectum was 104.5, pulse 120, respirations 24. Excrements and urine were voided involuntarily. Typhoid fever was suspected.

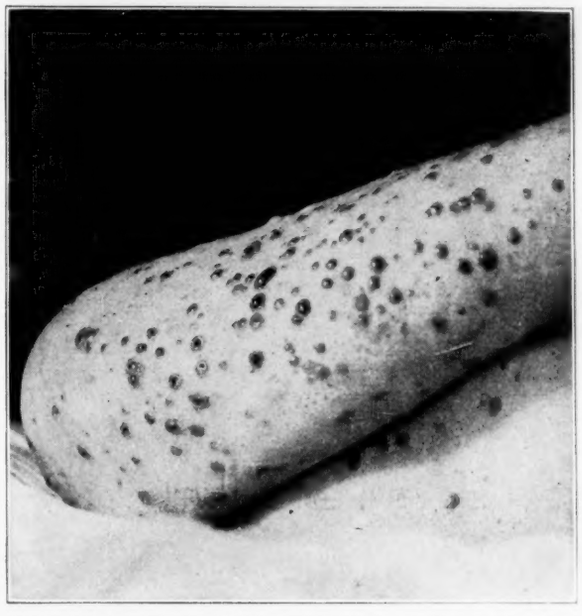


Fig. 1.—Pustular eruption of acute glanders as exhibited on the day of the patient's death, twenty-eight days after initial chill.

Clinical Course.—A cold sponge reduced the temperature to 101 and the patient slept quietly until 6 o'clock the next morning. At 11 o'clock the face was flushed, the nose completely obstructed and discharging thin bloody pus. The pustular eruption had extended over the left side of the chest to the umbilicus, and upward onto the face and into the hair and from the right wrist upward to the elbow. A few scattered pustules appeared over the lower extremities. Temperature was 102, pulse 110, respirations 30. The scrotum was swollen and an ulcer had formed during the night on the glans penis near the meatus urethræ. The urine contained some albumin and gave no Diazo reaction. A Widal test proved negative. The patient was taken to Wesley Hospital at noon. During the afternoon and evening of this (the twenty-seventh) day the pustular eruption gradually spread over the whole body, appearing last on the back. The scrotum became more

* From the Department of Pathology, Northwestern University Medical School.

and more edematous and the glans penis gangrenous. Temperature varied between 103 and 106 per rectum and the patient was delirious. The next morning the patient was seen by several physicians, the case being now suspected of being smallpox.

Second Examination.—I saw the patient at this time. He was in a semicomatose condition. The face and neck were of a dusky red color and swollen, the glands of the neck enlarged. A thin serosanguinolent fluid escaped from both nostrils. The patient's left shoulder was erysipelatous and covered with a bullous eruption. The scrotum was markedly edematous and the glans penis gangrenous. The whole body and especially the extremities were covered by discrete pustules, somewhat resembling smallpox pustules. The oldest pustules were the size of a large pea. A few of these were umbilicated. Most of the pustules were distended, pointing and glistening, of a grayish yellow color and surrounded by a narrow hyperemic zone. They contained a viscous fluid with many polymorphonuclear leucocytes and glanders bacilli. Small red macules and papules were distributed in moderate number between the numerous, distended, pea-sized pustules. Cover-glass smears taken from opened pustules of the head, body and extremities all showed numerous bacilli, as many as thirty in some of the fields, having the characteristic morphology of the *Bacillus mallei*.

A positive diagnosis of acute glanders was made.

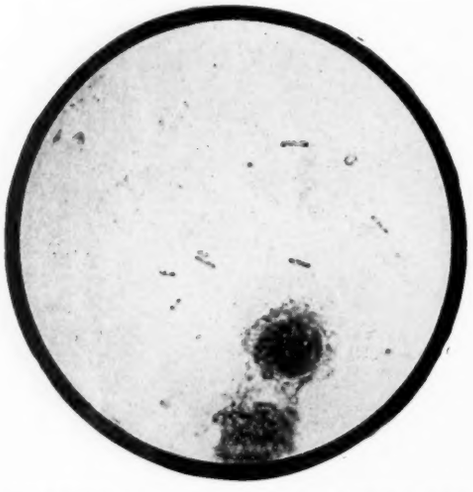


Fig. 2.—Cover-glass smear from opened pustule, showing glanders bacilli.

The patient died the same evening, twenty-eight days after the first distinct chill, with a temperature of 107. A request for autopsy was denied by the relatives.

Bacteriologic Examination.—The bacilli were non-motile, showed a slight tendency to parallel arrangement and were found in small groups with two or three end to end. Their length varied between 2 and 5 microns, thickness 0.3 to 0.8 microns. The ends were rounded, sometimes club-shaped, and cover-glass smears of the pus stained for three minutes with heated Loeffler blue showed deeply-staining areas and chromatic globules within the pale-blue ground substance of the bacilli. The irregularity with which the bacilli take the stain is quite similar in some of the specimens to that of diphtheria bacilli, many of the deeply-staining chromatic globules being round or ovoid; but, on the whole, the chromatic globules are not as distinct and numerous as in diphtheria bacilli, but appear frequently only as irregular granules alternating with light or poorly staining areas of the bacillary bodies. The bacilli were Gram negative. Characteristic cultures were obtained on the different culture media. Potato cultures, direct from the pustules, showed rich, glossy, elevated yellowish and semitransparent colonies with sharp borders on the second day, which became like amber or honey on the third and fourth days and opaque and reddish on the seventh and eighth days. Subcutaneous and intraperitoneal inoculation proved fatal to guinea-pigs, but the male guinea-pigs inoculated intraperitoneally did not develop the inflammation of the tunica vaginalis, testicle and epididymis described by Strauss.†

It may be of interest to note that unless one is careful in the examination of the stained smears of pus or cultures the deeper staining globules of the glanders bacilli may easily give rise to the opinion that groups of staphylococci are seen. Particularly is this the case if the bacilli are in dense clumps, as is not unusual in the thick smears from cultures. In gross appearance fresh agar cultures of the pus may also simulate the *Staphylococcus aureus* somewhat by producing rich, shiny, yellowish colonies, so that it is not uncommon, unless one is experienced, that a bacteriologic diagnosis of *Staphylococcus aureus* is made from thick smears.

This also explains the frequency of *Staphylococcus aureus* contaminations reported in the literature in cases of glanders in which bacteriologic examinations of the pus were made.

If very thin smears are obtained of these cultures the cocci are seen to be deeply staining portions or chromatic globules within the faintly staining ground substance of the bacillary bodies. In thick smears, with clumps of glanders bacilli, these globules appear like cocci and the faintly staining bacillary bodies or ground substance as a delicate spider-like network.

It is just this morphologic and tinctorial characteristic of the thin smear preparation, and the absence of all other bacteria, which makes a direct bacteriologic diagnosis from the smear of pus of a glanders pustule so easy. In a case like the one reported the necessity for an immediate and positive diagnosis between smallpox, pustular syphilid and glanders is apparent.

4016 Vincennes Avenue.

† Arch. de med. exper., 1889, i, 460.

THE PREVENTION OF CANCER CELL IMPLANTATION

A PRELIMINARY REPORT *

EDMUND A. BABLER, M.D.

Associate Surgeon, St. Louis Skin and Cancer Hospital; Assistant Surgeon, Evangelical Deaconness Hospital; Assistant in Surgery, Washington University.

ST. LOUIS, MO.

The finding of carcinomatous nodules in the region of the scar after the operation for removal of a carcinomatous growth has, until recently, been considered *prima facie* evidence of the surgeon's failure to excise all of the malignant growth. The investigations of Handley, Halsted, Warren, Ryall and others have succeeded in elucidating the subject and in emphasizing the importance of cancer cell implantation. We now appreciate the fact that cancer cells may, and in fact frequently do, escape from the carcinomatous tissues during operation and develop in any part of the operative field into fresh cancerous growths.

In cancer surgery there are four varieties of operation infection: (1) suture-scar infection, (2) nodular infection of wound, (3) diffuse or brawny infection, and (4) distant implantation. The first two forms are, according to Ryall,[1] of quite frequent occurrence, while the diffuse or brawny variety is the most startling and most distressing; it signifies widespread dissemination of cancer cells at the time of operation. Distant implantation is that form of operation infection in which

*From the St. Louis Skin and Cancer Hospital.

1. Lancet, Oct. 3, 1908.

the cancer cells are carried to and implanted in a part cut into at the time of operation, but more or less distant from the primary growth. Infection of the abdominal incision following celiotomy for removal of a carcinomatous uterus represents the latter form of implantation.

LIBERATION OF CANCER CELLS

Cancer cells are liberated from carcinomatous tissues in many ways, e. g.: rough handling of the growth, piecemeal excision of carcinomatous tissues, deliberately cutting into the growth, tearing or cutting infected lymphatic glands and channels, rupturing diseased lymphatic glands, etc. The conveyance of cancer cells from the primary growth to distant parts by instruments, assistant's gloves, etc., does not seem to be duly appreciated by some operators.

It is clear that in many cases poor surgical technic is responsible for cancer cell liberation. It is also true that the surgeon can not always be sure that cancer cells have not been liberated and found their way into the field of operation. The common expression that "the secret of success in the treatment of cancer is early, complete excision of the diseased tissues" needs, I think, modifying so as to read, "The secret of success in cancer surgery is early, complete excision of the carcinomatous tissues and the prevention of cancer cell implantation."

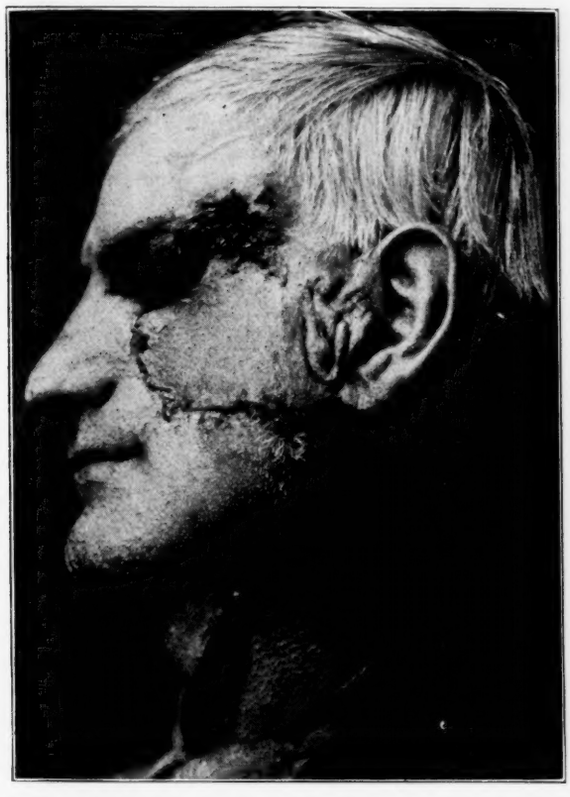


Fig. 1.—Patient described in Case 1, ten days after operation. Destructive growth of left cheek involving the orbital tissues and cervical glands.

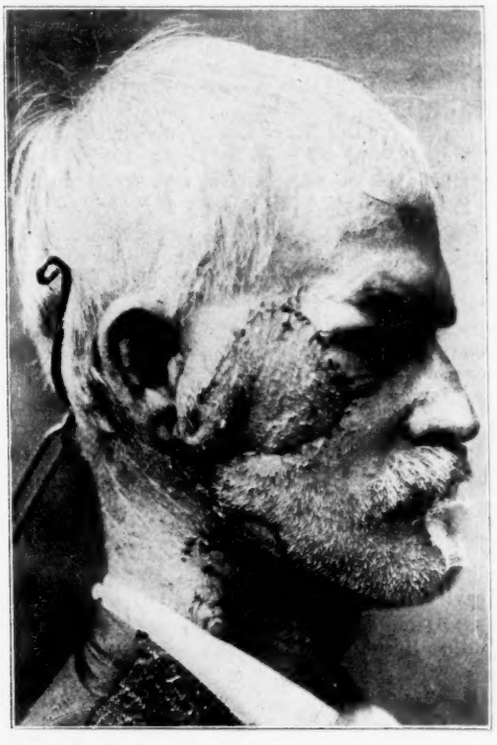


Fig. 2.—Patient described in Case 2, five days after operation. Epithelioma of lower lip; epitheliomatous mass over right malar prominence.

OPERATIVE TECHNIC

Successful cancer surgery signifies the strictest asepsis, the most gentle handling of the growth, the avoidance of cutting and tearing into the carcinomatous growth and diseased tissues, the excision of all diseased lymphatic glands and channels, wide excision of the carcinomatous tissues, and the destruction of cancer cells which may have been liberated and found their way into the operative wound in spite of all precautions.

It is reasonable to suppose that Keating Hart's method of exposing inoperable cancer cases to "fulguration," exposure for from five, ten to forty minutes to the strongest possible "lightning spark pencil" at a distance of two to four centimeters, and with frequent changing of the area exposed, previous to and immediately after excision of the growth, aimed at destruction of part of the remaining carcinomatous tissue and the liberated cancer cells. It is also probable that Crile's method of exposing the operative field in his breast cases to daily exposure to the Roentgen rays for two weeks before any attempt is made to graft or suture the parts, is for the purpose of attempting to destroy liberated cancer cells and possibly overlooked carcinomatous tissues.

Appreciating the dangers of cancer cell implantation, it occurred to me that the operative field could be swabbed with some antiseptic solution sufficiently strong to destroy the liberated cells without at the same time interfering with primary union and without inducing toxic symptoms. The possibility of accidentally cutting into infected lymphatic channels and glands, or otherwise liberating cancer cells, in spite of the utmost care, is known to every surgeon of wide experience. My very favorable experience of four years with the alcohol-bichlorid-hydrochloric acid solution, recommended by Harrington in general surgery, led me to apply it to the operative field after excision of carcinomatous growths.

During the past three months I have been using Harrington's solution—applying it to the diseased tissues during removal, and directly to the operative wound after the diseased tissues had been excised—in all of my surgical cases at the St. Louis Skin and Cancer Hospital. The results have been all that could be

desired. The solution undoubtedly destroys the superficial parts of the operative field, closes the cut ends of the capillaries and lymphatic channels and apparently eliminates the danger of cancer cell implantation. In a recent case of sarcoma of the parotid the solution was applied directly to the carotid arteries and internal jugular vein; the duration of contact was too long; the vein became a brownish color and I feared that the destructive action would prove of detriment, but no untoward symptoms followed. We have used Harrington's solution in the surgical clinic at the Washington University with gratifying results. A few days ago a young man who had been struck on the lower lip with a pair of brass knuckles presented himself for treatment. Examination showed a gangrenous condition of a V-shaped portion of the lower lip. The gangrenous tissue was excised, the wound margins thoroughly cleansed with Harrington's solution and the parts sutured. Primary union followed. Sutures removed on fourth day.

REPORT OF CASES

CASE 1.—*History.*—Mr. J. K., aged 57, was readmitted in September, 1908. When a child he sustained a severe burn on left cheek. In January, 1908, he was struck in this region and shortly thereafter a small ulcer appeared and grew gradually larger. In May, 1908, it was as large as a silver dollar. On entrance, Dr. Drake found that the malignant mass was situated in the scar of the burn; the eye was intact. Healing did not follow excision of the growth. During the past two months the parts had become very painful and the growth markedly larger. Patient returned for excision of growth.

Examination.—This showed large, destructive growth on left cheek involving the orbital tissues and the cervical glands. General appearance of patient was very poor. Left side of face was paralyzed.

Operation.—Under ether anesthesia (preceded by morphin and atropin), a large flap was dissected from the neck, the left anterior triangle of the neck was cleared of glands and fat. Harrington's solution was applied both to the flap and to the operation wound, the latter was then sutured and the flap wrapped in gauze, and then covered with a towel, in the hands of one of the assistants. The orbital cavity was then cleaned out and the parts touched with Harrington's solution, after which the cavity was packed with gauze. After free excision of the growth on cheek and sponging the parts with Harrington's solution, the flap was sutured in position (Fig. 1). The orbital cavity was left open for *x*-ray purposes. The sutures in flap were removed on the fifth day, and the neck sutures on the seventh. Roentgen ray exposures were given every third day.

CASE 2.—*History.*—Mr. J. S., aged 56, admitted September 14, 1908. Four years ago he noticed a small growth on right cheek near malar eminence. Became larger and painful. Two years ago he had the growth removed, but the wound did not completely heal. During the past year the growth had been increasing in size and had become quite painful. Four months ago patient noticed small ulcer in middle of lower lip; this had been getting larger and would not heal.

Examination.—This was shown to be an epithelioma of lower lip; no palpable submental glandular involvement. Over the right malar eminence was an epitheliomatous mass as large as a silver dollar; the growth was very firm and ulcerated. The orbital cavity seemed free. The glands of neck were somewhat enlarged. The growth was movable.

Treatment.—Under ether anesthesia (preceded by morphin and atropin) a flap was dissected up from neck, the glands together with the periglandular fat, were excised and the operation wound sponged with Harrington's solution, after which the flap was likewise treated and wrapped in gauze, and the wound closed. The carcinomatous mass was then freely excised and the parts sponged with Harrington's solution, followed with saline solution. The flap was sutured in place and temporary dressings applied. After securing fresh instruments and gloves, the submental glands and periglandular fat were removed and the operation wound sponged with Harrington's solution, and then sutured. The lip growth was then excised, the parts touched with the solution, and then sutured. Primary union followed. The illustration (Fig. 2) shows the wound five days after operation. The deep sutures were removed from cheek and neck on the eighth day.

REMARKS

I do not offer Harrington's solution as a substitute for proper surgical technic in cancer surgery, but as a valuable and efficient aid to the best possible surgical technic for the prevention of cancer cell implantation. Experiments are now in progress to determine the exact depth to which the destructive process extends when the solution is applied to a section of carcinomatous tissue for one, one and one-half, two and three minutes respectively. These results will be reported later. When the solution is applied to healthy tissue the destructive action is plainly seen.

At the present time I apply Harrington's solution to every part of the cut surface of the carcinomatous mass that is being removed; the growth is excised as rapidly and as carefully as possible, after the infected lymphatics and their periglandular tissue have been excised. After stoppage of hemorrhage in the wound the solution is applied to the entire field for one-half to one minute, depending on the character of the surface. In delicate flap operations the solution is very carefully applied. It is essential that all parts of the wound be touched with the solution. Where extensive dissections have been it is advisable to use a rubber-tissue drain. In intra-abdominal carcinoma the solution is applied to the abdominal wound after closure of peritoneum. When the extra-abdominal tumor is ulcerated Harrington's solution is applied for two minutes to the ulcerated portion.

4826 Delmar Boulevard.

SOME PRINCIPLES OF CEREBRAL SURGERY *

HARVEY CUSHING, M.D.
Associate Professor of Surgery, Johns Hopkins Hospital
BALTIMORE

In the presence of an extrauterine pregnancy, of an inflamed appendix, of gallstones, of pyloric stenosis, or what you will, of the many intra-abdominal lesions so frequently encountered, how many surgeons feel less competent to recognize the condition than their colleagues who are disinclined themselves to handle scalpel and forceps? And further, would these very colleagues be willing for a moment to call the surgeon in consultation on these cases if they did not feel assured that he is as familiar as they themselves with the anatomy and physiology of the organ concerned and the morbid processes, with their complications, to which it is liable?

One of the trying responsibilities of many physicians arises from the consciousness that they must protect their patients from the over-zealous interest of the chance operator, whose manual facility exceeds his knowledge of disease, an attitude almost as deplorable as that in which the trained surgeon may find himself with his opportunity to relieve slipping by, owing to

* Read in the Joint Meeting of the Section on Surgery and Anatomy and the Section on Laryngology and Otology of the American Medical Association, at the Fifty-ninth Annual Session, at Chicago, June, 1908.

the procrastination of the attendant who favors surgery not at all, or as the last resort only.

Yet neither party would be willing to recall the day, not far remote indeed, when the physician selected the instruments for and directed the course of an operation so simple as a herniotomy, the "Bruchschneider" having been merely the more skilful hands for the better informed mind and superior judgment of the physician. Under this relation the advance of surgical therapy was necessarily slow, if not indeed often backward, and strides were not made in this manipulative division of therapeutics until the Hunters and the Hallers, the Bells and the Brodies, the Langenbecks and the Listers began to place a knowledge of the condition of disease as the chief asset of the surgeon—not his mere familiarity with probe and bistoury.

And yet this is the condition of things which pertains to-day in neurology; and it is putting the cart first for us surgeons to talk wisely about the technic of neurologic surgery if we know so little about the maladies toward which these measures are to be directed. Operations become dangerously safe under such circumstances, and if we do not invade this uncertain

Fig. 1.—Photograph taken during the course of a craniotomy, just before elevation of an osteoplastic flap, to show well protected field and hood for anesthetist.

field most cautiously we may be open to the same criticism not unjustly cast on the activity of certain laparotomists, likened to the inquisitive child who cuts a hole in a drum-head to see where the noise comes from.

As surgeons approaching neurologic maladies, what most of us need, therefore—a "finger and thumb" knowledge of neurology—can only be obtained with labor, patience and tears, for even the best of our schools do not as yet particularize on the relation of surgical measures to diseases of the nervous system, as they have come to do in the case of the eye and ear, of the pelvic and genitourinary organs, of the alimentary canal, the bones and joints, and what not, though it is a still more specialized form of work. Thus it is, I think, that those who look forward to a career in neurology should be instructed in matters of surgical technic—in other words, that a school of neurologists must grow up in the next generation with a general surgical training which will enable them to do their own operations. Now they can only stand by and wring their hands at the incompetency of much of the work that is being done for them by others.

After this preamble, which is indeed the most important of the things I shall have to say, I may pass to the brief consideration of the few principles which I desire to emphasize.

FUNCTIONAL DISTURBANCES

Practically all diseases, whatever they may be, have a certain superstructure of symptoms, which we choose to call functional, superimposed on those for which an

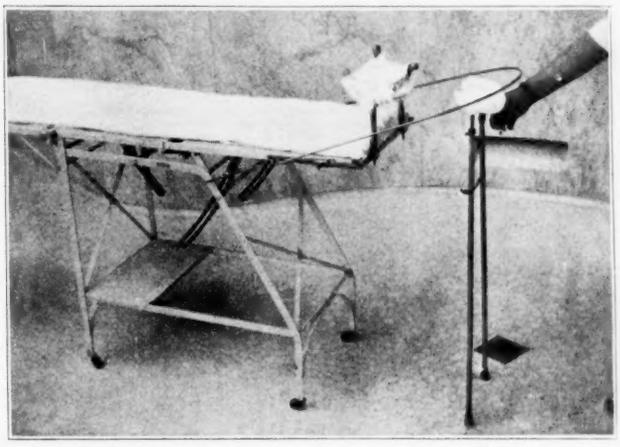


Fig. 2.—Showing table for cerebellar operations with outrigger shoulder supports, crutch for head, and hoop to support operative sheets.

actual organic lesion is clearly responsible. This superstructure may often so overtop the basal trouble, which may actually be trifling, as to completely obscure it, and neurasthenic or psychasthenic states result. This is especially true of lesions which primarily affect the nervous system itself; and no class of patients require so much personal direction and moral control as do many of these unfortunates.

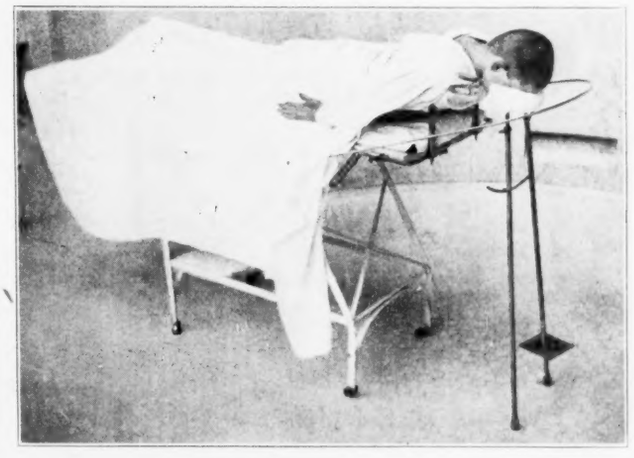


Fig. 3.—Same as Fig. 2. Patient in position before anesthesia.

Oftentimes the relief of the functional element is more to be desired than the cure of the organic lesion, even if one be recognized; and it is one of the deserved criticisms of many operators that we are apt to let our patients go with their organic lesion healed—may we say cured?—but with their functional distress unabated or even accentuated. It lies within the power—indeed it is the duty—of the surgeon who takes these cases in charge, not only to remove or improve the condition of

the underlying lesion, if that is possible, but to attend as well to these so-called neuroses, and it is for this reason, if for no other, that he must not only get intimately in touch with his patient by a history and thorough personal examination, but must also attend himself to every detail of operative preparation and after-treatment. Whether he exercises its power consciously or—as is true of many of the most successful therapeutists—unconsciously and as a natural gift, what has come to be "dignified" as psychotherapy must be the neurologist's constant resource, be he surgeon or otherwise.

Fig. 4.—Same as Figs. 2 and 3. Anesthetist wearing headband with receiver and tube leading from phonendoscope.

ANESTHESIA

Among the numerous details of a cranial operation there is one thing I particularly wish to dwell on—the administration of the anesthetic[1]. In cranial operations in particular, not only because of the cramped field and the need of a covering for the anesthetist, but also because the cardio-respiratory centers in the medulla are often already embarrassed through pressure, anesthetization by an expert is absolutely essential. There are trials enough for the surgeon in these cases without the added anxiety in regard to narcosis. For the past few years Dr. S. Griffith Davis, who devotes his time almost exclusively to this work, has greatly lightened these responsibilities for me by anesthetising all my neurologic patients. It is due entirely to his skill that in over three hundred cranial operations there has been a complete absence of the calamities usually assigned to anesthesia.

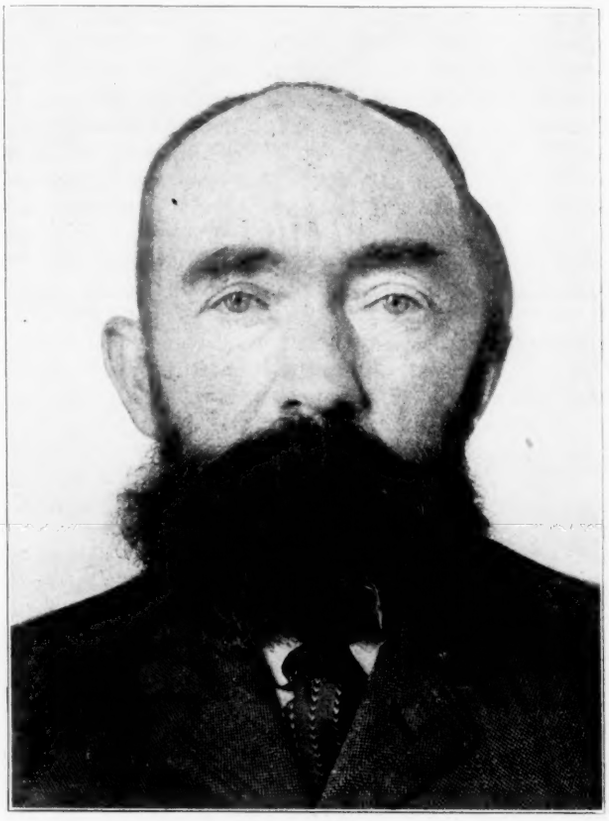


Fig. 5.—Showing fairly large left subtemporal protrusion six months after decompression for unlocalizable growth. Patient in perfect health and actively engaged in his occupation as a farmer.

Fig. 6.—Large glioma (A) of right hemisphere leading to contralateral hemiplegia and hemianesthesia, with enormous hernia which followed exploration and decompression directly over the growth, in consequence of hemorrhage (B) into the substance of the tumor owing to dislocation. Extent of protrusion shown by position of curved line.

Owing to the difficulty in cranial work of shutting off the anesthetist from the operative field, many have advocated rectal or other bizarre forms of administering the various drugs employed for this purpose; but we have been so free from accidents on this score and have learned to arrange so securely the operative sheets as to make a hood which effectually conceals the anesthetist and leaves exposed only the immediate small field of operation (Fig. 1), that we have clung to the more familiar and, I think, safer method of inhalation anesthesia.

I have described elsewhere[2] our invariable custom of shaving such

1. The general disregard of the risks of anesthesia, particularly in this country, has been deservedly arraigned by John B. Roberts: The Anesthesia Peril in American Hospitals, Therapeutic Gaz., February, 1908.

2. Technical Methods of Performing Certain Cranial Operations. Sur., Gyn. and Obstet., March, 1908, 227.

portion of the scalp as needs to be prepared, just before the operation; of placing the patient on the table in the most comfortable position compatible with a good operative exposure before the anesthetization is begun; and of superficially outlining the proposed incision on the scalp after its final cleansing and before the small operative field is securely and closely surrounded with the sheets and towels, which are often pinned directly into the scalp to insure against their dislodgment during the course of what may be a long operation.

The large sheet which covers the etherizer is provided with a semicircular notch cut into one side, at the angles of which are fastened tapes to be tied around the patient's head, thus securely anchoring the coverings in such a position as to expose merely the area of the incision previously scratched on the scalp.

The two alternatives to this method—(1) the shaving of the head the day before with delineation on the scalp of the cerebral fissures or of the proposed incision with an indelible pencil, or (2) the leaving of the head so exposed after the final preparation of the field that the bony landmarks can then be utilized for these determinations at the time of operation—both possess serious drawbacks.

To some, these may seem petty details, but the total freedom from infection, even as a stitch abscess, in a

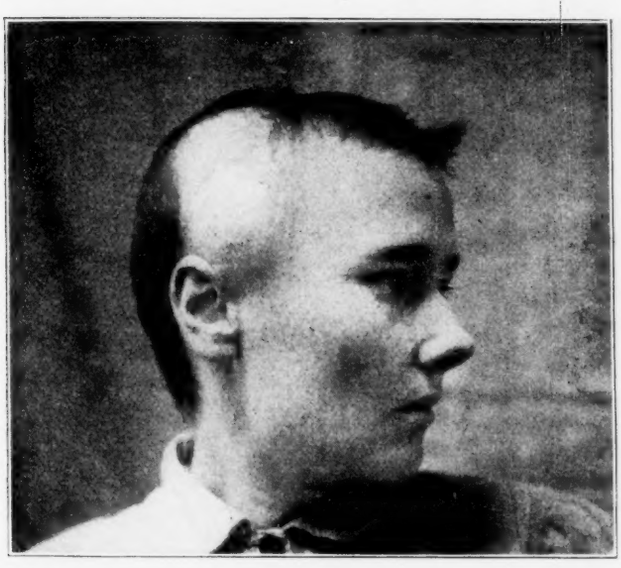


Fig. 7.—Patient with right subtemporal decompression, performed April, 1907, at a time when no recognizable focal symptoms were present. In May, 1908, a beginning loss of stereognostic perception in the left hand pointed to the position of the tumor in the right superior parietal lobe. It proved to be an encapsulated growth which was successfully removed. See Fig. 8.

series of three or four hundred craniotomies justifies the attention paid to them.[3]

I have already spoken of the fact that these patients, particularly in the presence of tumor, not infrequently show evidence before the operation of some respiratory embarrassment, and for this reason the administration of the anesthetic on the table in a position which assures free respiratory movements is a most essential precaution.

A special form of outrigger with head and shoulder supports (Figs. 2, 3 and 4) has been found necessary, however, only for suboccipital or high spinal operations in which a symmetrical exposure is desirable, for reasons—on the principle of dislocation—to be explained later.

I was led to adopt such a table extension owing to the respiratory difficulties which patients experienced[4] when placed in a prone position without such supports, and further by the added difficulty to the anesthetist which this position otherwise engenders. Since its adoption these posterior operations, so far as position goes, have proved no more trying than those on the more accessible cranial vault.

It has been possible in my 24 cerebellar cases, largely owing to this device, to complete the operation in one sitting and thus to avoid a "two stage"

Fig. 8.—Shows (above) the external surface of the tumor removed from patient, Fig. 7; and (below) the median section of the growth which is beginning to undergo central cystic degeneration. (Size slightly reduced.)

performance—especially undesirable in suboccipital work.

With a patient in this prone position it is difficult for the anesthetist to gauge fully the variations in cardiac action, and during the past six months Dr. Davis has employed in these, as in all other operations indeed, a simple device, so satisfactory that we wonder why it has not long since come into general use—namely, the *continuous auscultation of cardiac and respiratory rhythm during the entire course of anesthesia.*

The idea arose from a practice in the Hunterian Laboratory of auscultating the heart during the production

3. The only cranial operation in my entire series in which the wound has become infected occurred in another city where I had been persuaded to perform a decompressive operation for tumor, and where it was impossible to follow our usual routine.

4. My first operation for a cerebello-pontine tumor resulted in a death from inhalation pneumonia—an experience which led to the adoption of this particular form of table extension. Since its employment I have had two successful extirpations of these lateral recess growths.

of experimental valvular lesions, and like other things has been carried from laboratory to clinic. The transmitter of a phenendoscope is secured by adhesive strips over the precordium and connects by a long tube with the anesthetist's ear, where the receiver is held by a device similar to a telephone operator's headgear (Fig. 4).

Uninterrupted information of the patient's condition is thus given, and the anesthetist need not disengage a hand for the occasional palpation of the pulse, which is all that he is usually expected to do. On several occasions, by the prompt appreciation of change in heartbeat or respiration thus acquired, it has been possible to avert what otherwise might have been surgical disasters, owing to the immediate warning which led to the cessation of certain disturbing manipulations.

[A series of lantern slides was shown at this point, illustrating Dr. Cushing's chosen method of performing the usual osteoplastic craniotomy.—ED.]

DECOMPRESSIVE MEASURES

Adopting, as I presumed, for the first time in English the term *trépanation décompressive,* introduced by Jaboulay[5] and used later by Broca and Maubrac[6], together with suggestions offered chiefly by Horsley and Sænger, I described,[7] in October, 1905, a method of de-

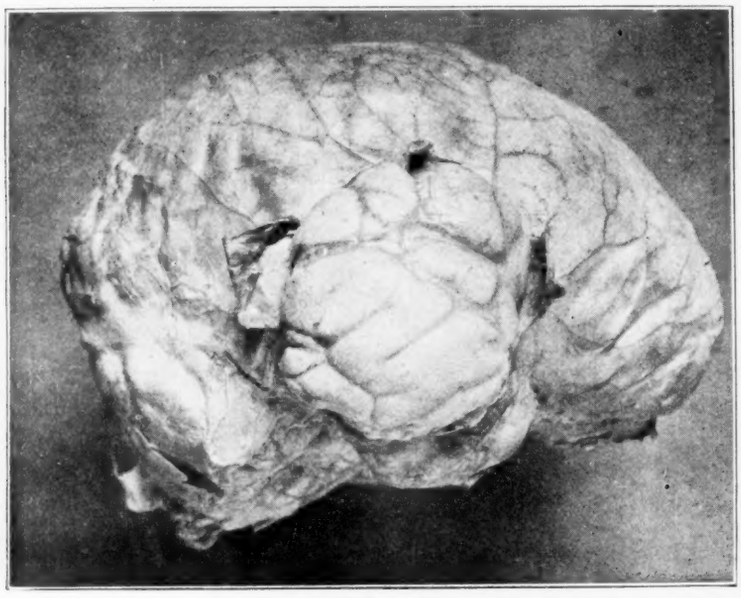


Figure 9.

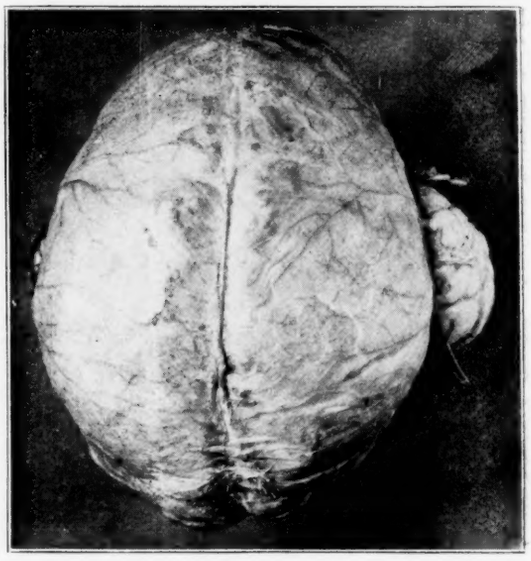


Figure 11.

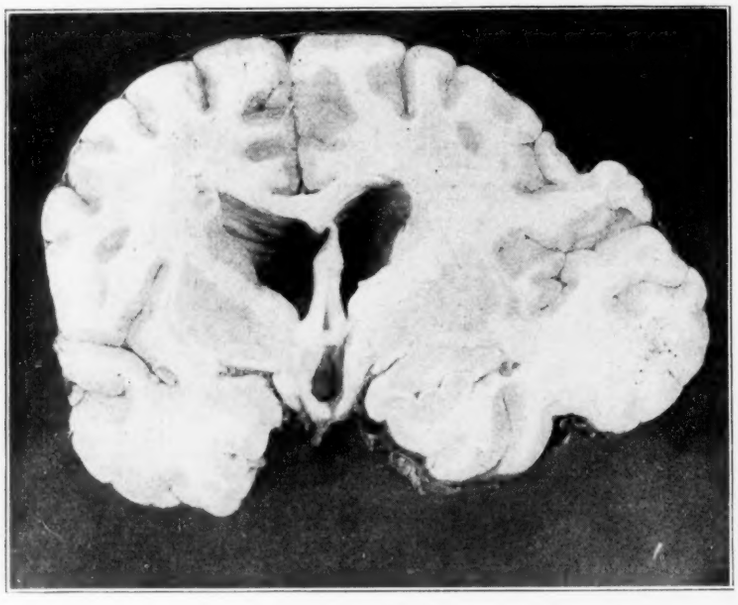


Figure 10.

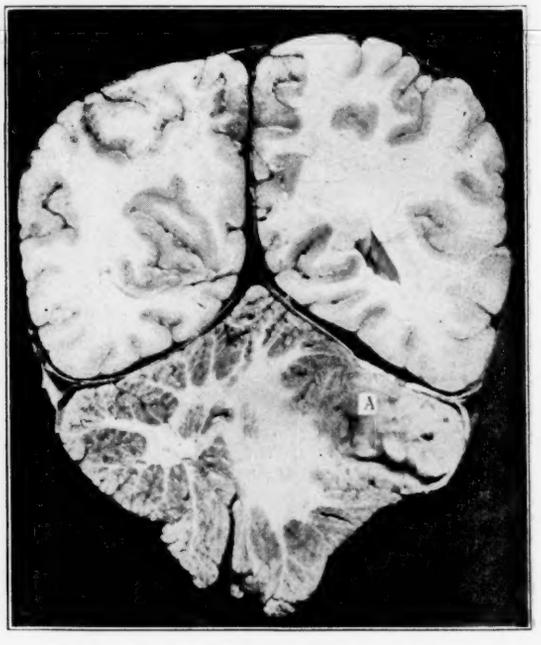


Figure 12.

Figs. 9, 10, 11 and 12.—Photographs of the brain and its envelopes from a patient in whom a right subtemporal decompression had been performed for unlocalizable tumor. Symptoms not greatly relieved in consequence of unsuspected obstructive hydrocephalus. A month later a misguided lumbar puncture led to a promptly fatal issue. Note in Figs. 9, 10 and 11 the situation and extent of protrusion with complete absence of cortical adhesions; the hydrocephalus in Fig. 10; the tumor at A in Fig. 12, a right cerebellar glioma.

5. La trépanation décompressive (la mobilizaton de la voute du crane), Lyon Médical, 1896, lxxxiii, 73.

6. Traitement chirurgical palliatif des tumeurs cérébrales, Arch. Général de Méd., 1906, i, 129.

7. The Establishment of Cerebral Hernia as a Decompressive Measure for Inaccessible Brain Tumors, Sur., Gyn. and Obstet., October, 1905, 297.

compression for brain tumor by establishing a defect of bone and dura in the subtemporal region where a so-called mute area of the brain might protrude and yet receive a certain protection through the overlying muscle and fascia.

Subsequent to the appearance of this paper Spiller and Frazier published an article[8] in which they collected, under the term "cerebral decompression," a long list of early cases in which exploratory operations for brain tumors had been followed by symptomatic benefit to the patient, even though the tumor was not found or removed, and these were spoken of as decompression operations. It must be clear to all that experiences of this kind were the forerunner of the decompression idea, and the possibility of palliation as the unlooked-for result of an exploration had been expressed by no one more concisely than by Robert F. Weir[8] as early as 1888; as follows:

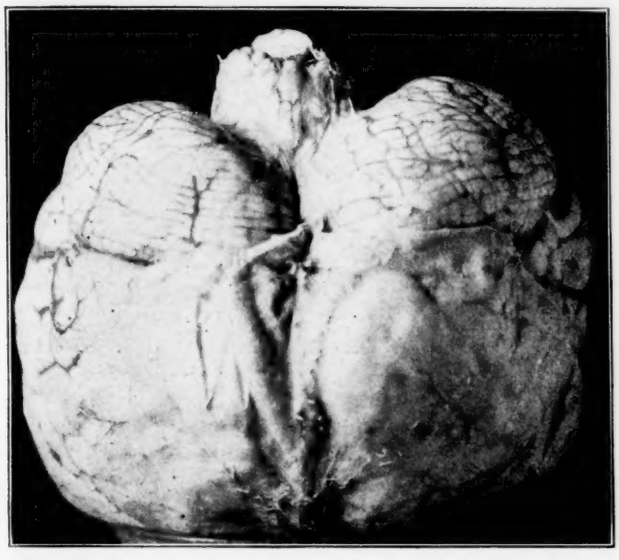


Fig. 13.—Photograph of posterior aspect of brain (inverted) in which multiple tuberculomas were present in the left hemisphere and cerebellum, and in which death resulted from lumbar puncture. Showing mould of cerebellomedullary hernia through foramen magnum.

"One instructive point has appeared in connection with a case of my own, which is that though no tumor was found the patient's symptoms were materially improved from the relief afforded by taking away a goodly portion of the bone. The result may afford an additional reason for the justification of an exploratory operation, since if no tumor be found relief to the brain pressure can be at least temporarily obtained."

I particularly emphasized in my paper the fact that the operation which I proposed was conducted *primarily* for the purpose of relieving tension in cases of unlocalizable or inoperable tumors, and not that any craniectomy originally undertaken for exploratory purposes might in the end serve the purpose of relieving tension—a matter that had long been appreciated, as the quotation above indicates.

What I would wish again to lay stress on are the following facts:

1. The operation is conducted through a split-muscle incision which exposes the thinnest and most easily removed area of the cranial vault.

2. The exposed area of the brain is a "silent" area, the possible permanent damage to which in consequence of a forcible protrusion leaves no appreciable symptoms.

3. An undue protrusion is obviated by the protection of the resutured muscle, fascia and galea (Fig. 5).

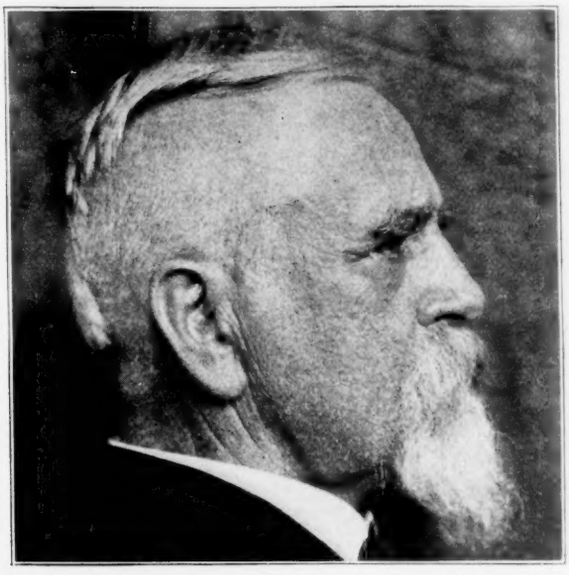


Fig. 14.—Photograph of patient eight days after a Gasserian ganglion operation to show limits of incision, which are here clearly apparent; also partial shaving of head.

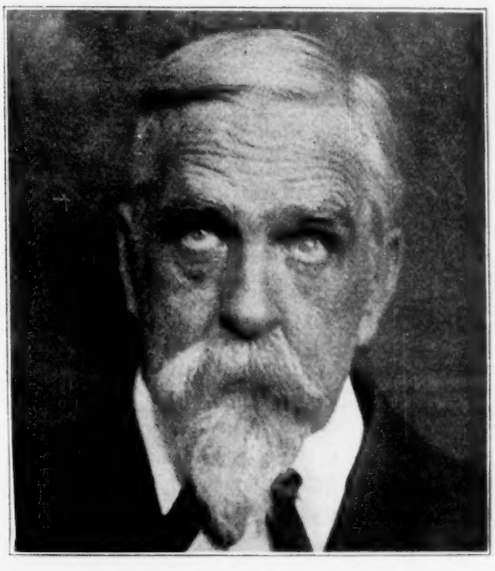


Fig. 15.—Same as Fig. 14, to show symmetrical wrinkling of brow and absence of other deforming consequences of the older operative methods.

4. Except in case of a growth so placed as to produce an internal hydrocephalus (Figs. 10, 11, 12, and 13), usually a considerable, often a complete, subsidence of symptoms may occur.

I have spoken elsewhere of the undesirability of decompression over the presumed seat of a tumor, for the consequent dislocation of the parts, from protrusion of the brain, often leads to hemorrhage into or around a vascular growth, which greatly augments its size and may lead to an enormous hernia (Fig. 6). In other

8. Cerebral Decompression. Palliative Operations in the Treatment of Tumors of the Brain Based on the Observation of Fourteen Cases, Univ. Penna. Med. Bull., 1906, xix, 146; also THE JOURNAL A. M. A., Sept. 1, 1906, 679; Sept. 8, 1906, 744; Sept. 15, 1906, 849; Sept. 22, 1906, 923.

9. Weir and Sequin: Contribution to the Diagnosis and Surgical Treatment of Tumors of the Cerebrum, Amer. Jour. Med. Sci., 1888, xcvi, 227-228.

words, an exploratory operation turned into a palliative or decompressive measure may be disastrous.

The subtemporal decompression is purposely made in a situation away from the growth and is not only, I think, the most desirable procedure for cases of tumor which present no localizing symptoms, but during the past year the measure has been used as a preliminary operation for the temporary relief of severe pressure symptoms, even when the location of the growth is evident and gives promise of being accessible at a later operation.

On a few occasions it has been possible through such a preliminary subtemporal decompression to preserve the osteoplastic flap raised at the subsequent operation for removal of the growth. Had the osteoplastic exploration constituted the primary operation, closure of the scalp would have been impossible without removal of the bone, and large defects of this kind in unprotected areas (that is, other than subtemporal or sub-

Fig. 16.—Photograph of patient seven days after the Gasserian ganglion operation. Note the invisible wound; the partial shaving of the head; the preserved action of the occipito-frontalis muscle.

occipital ones) are distinctly undesirable, even though, as Horsley has shown, aside from the deformity they may lead to no serious consequences.

I have stated on another occasion that no brain tumor may be so favorable for prompt operation as one which gives absolutely no clinical indications of its situation. Though difficult to make clear to many neurologists, the significance of this seemingly paradoxical statement is explicable in the light of some of our more recent experiences. For a number of years (the first subtemporal decompression was performed in September, 1903) these decompression operations have become a more or less routine measure in certain cases, until at the present time—taking the subtemporal operations alone—there have been about 100 all told, 60 of them for presumed supratentorial tumors. Though many of these patients remain comparatively free from all symptoms of pressure, what is more important, others have returned after periods varying from one to three years with an onset of symptoms pointing at last toward the situation of the lesion, which in a number of instances has been successfully removed (Fig. 7).

In other words, the decompression in a safe area has usually so relieved the general pressure symptoms as to make patients subjectively comfortable and with their eyesight retained—a considerabe number of them indeed capable of earning their livelihood. Of the cases in which the growth has not been localized at the time of decompression, in some it has emerged, as it were, from its silent area and has shown focal symptoms; in others it has remained silent and in some instances indeed may even have metamorphosed into a cyst. Few of these patients would, I believe, have continued to live more than a few weeks or months, and some of them have passed from an actual bedridden state to active life again.

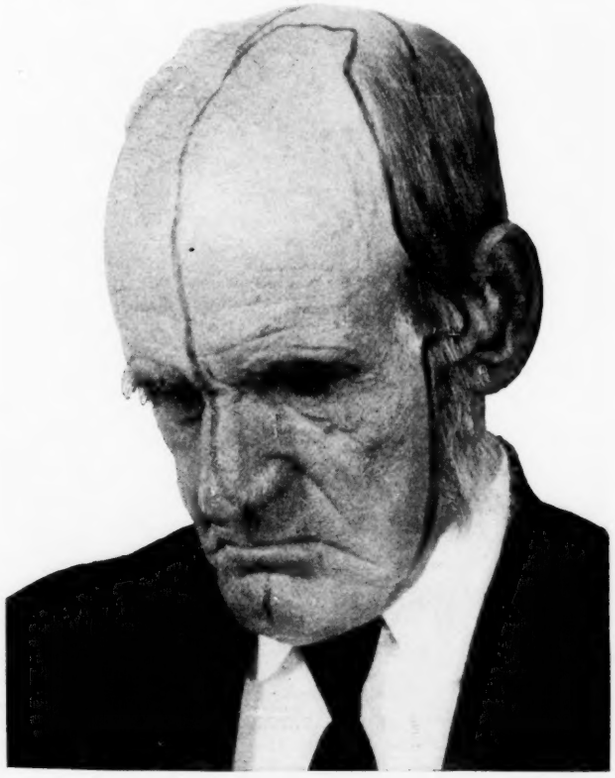


Fig. 17.—Showing persisting area of total anesthesia three years after a ganglion extirpation.

[At this point a number of lantern slides were shown, illustrating the steps of a subtemporal decompressive operation and of patients on whom the measure had been carried out, not only to relieve the increased tension of tumor but for other conditions associated with pressure, such as uremia and the cerebral edema accompanying basal fractures, cerebral arteriosclerosis, thrombosis and embolism of the cerebral vessels, etc.—ED.]

LUMBAR PUNCTURE IN BRAIN TUMOR CASES

A brain tumor usually, though not invariably, increases the cerebral tension, causing thereby the underlying pressure symptoms of headache, dizziness, nausea or vomiting, and choked disk. This increase of cerebral tension leads, as we have seen, to a greater or less protrusion of exposed cortex through any operative defect which may have been made in the cranium and pachymeninx (Figs. 9, 10, 11, and 12). As is well known, Nature occasionally succeeds in relieving the tension

made by a new growth—in the young through separation of the sutures, and occasionally in adult life, if the growth is a superficial one, by an area of pressure absorption.[10]

Furthermore a greater or less protrusion is inevitable through the normal opening at the foramen magnum—a natural defect in the cranial chamber. As a result of this the brain stem with a surrounding fringe of cerebellum is crowded down into the spinal canal—a condition which is especially marked in the presence of a subtentorial growth; for the tentorium in a measure serves to protect the cerebellum and hind-brain from the pressure effects of supratentorial (cerebral) growths.

This protrusion of brain stem—an actual hernia cerebelli—is of the utmost importance in its relation to the performance of lumbar puncture. For it is undoubtedly due to the presence of such a hernia that withdrawal of fluid by the lumbar meninges, especially in cases of cerebellar tumor, has so often been attended with early fatality from respiratory failure, the continued pressure from above sufficing, on the withdrawal of the fluid support from below, to further wedge the bulb into the foramen in such a way as to cause pressure anemia of the vital medullary centers.

Not a few instances of disaster in consequence of lumbar puncture have been recorded in the literature, and six have come under my personal observation—three of them were fatalities in the medical wards after puncture in cases of unsuspected cerebellar lesion,[11] and three have occurred in my own surgical experience (Figs. 9, 10, 11, 12, and 13). If the brain after such an accident be removed from the cranial chamber soon after death, and particularly if hardened *in situ*, it will show the imprint of the foraminal ring about the protrusion which has been tightly jammed into the opening.

In Figure 13 the mould of this cerebello-medullary hernia is well shown in the brain from a patient with multiple cerebral tuberculomata—a single large tubercle in the left cerebellum having been unsuspected. During the course of a subtemporal decompression, owing to the great tension of the dura, a lumbar puncture was performed before opening this membrane. The fluid, under great tension, spurted for a moment from the needle, but ceased to flow after about 4 c.c. had escaped, when respiration almost immediately ceased. Under artificial respiration the dura was quickly incised, and though for a few moments normal breathing was resumed it soon ceased and the heart continued to beat for three hours as an isolated organ, which doubtless could have been kept in action under artificial respiration for a period indefinitely longer.

This is far from a unique experience,[12] but it is cited here for the purpose of emphasizing the hazard of lumbar puncture which exists in the presence of increased subtentorial tension.

In tumors above the tentorium, however, the continuous withdrawal of fluid during the course of an operation for decompression or for extirpation of a growth often proves an invaluable aid, and since I first called attention to the practice[13] it has frequently been employed. Helpful as the measure is and without particular risk, I believe, in solid lesions or edemas increasing the tension of the hemispheres, the possibility of an unsuspected cerebellar growth should always be borne in mind and the puncture not made unless the dura is exposed and ready for immediate opening in case medullary symptoms supervene.

In suboccipital explorations, on the other hand, the puncture would often be as dangerous as it is unnecessary, for one of the most important steps of these operations, after incision of the dura low down near the removed margin of the foramen magnum, is to open the exposed posterior cysterna and thus allow the pent-up cerebrospinal fluid to escape from above. If this precaution is not carried out the cerebellar tension often causes the hemispheres to bulge through the first dural opening so markedly as to rupture the pia-arachnoid and thus to cause extravasations which of themselves, through edema, rapidly increase the tension already present.

THE PRINCIPLE OF OUTWARD DISLOCATION

This leads me to speak of the principle of dislocation without injury of normal cerebral or cerebellar tissue during an exploration or in the approach to a surface lesion more or less difficult of access, of which cerebello-pontine tumors may be taken as a type. The thorough evacuation of cerebrospinal fluid from the basal cysternæ as mentioned above is of great assistance, but more important still is the bilateral opening with wide exposure of both cerebellar hemispheres. Under these circumstances, when one hemisphere is pressed to the side the other dislocates outward, giving a free view of the lateral recess without contusion of the easily damaged cerebellar tissue and without the field being obscured through blood staining. The latter is inevitable when a portion of the hemisphere is removed in order to give access to a tumor situated in this freely accessible angle. With a unilateral opening an equally free exposure is dangerous, if not impossible, without excision of a portion of the cerebellum.

This same principle is applicable to growths difficult of access in other situations, and I have found that in certain cases a preliminary subtemporal craniectomy, made some weeks or months before, proves sufficient for purposes of dislocation at a subsequent extirpation. For the approach to basal tumors in or near the mid-line I have occasionally made a large flap, with a wide dural opening, on the same side as that of the proposed exploration, and this has proved sufficient for thorough exposure in some cases, notably one of uncinate gyrus tumor and another of growth near the angular gyrus.

By applying this same principle I am confident that the best approach can be made to the pituitary body, though in these operations a bilateral opening is doubtless preferable—namely, a large exposure of the brain on the side opposite to that through which the pituitary fossa is to be exposed and a lesser cranial opening on the side of approach itself, with the smallest and lowest possible linear incision of dura. In this way the resistent membrane serves to protect the temporal lobe during its subsequent elevation, and through the large opening over the opposite hemisphere the brain readily dislocates outward in correspondence with the degree of

10. It may be said that in most cases of increased pressure, minute herniæ occur at the situation of the arachnoidal villæ, those that I have seen being particularly abundant over the under surface of the temporal lobes. Dr. S. B. Wolback has demonstrated that these minute surface irregularities are actual herniæ of the cortex. Journ. of Med. Research, July, 1908.

11. One of these cases was pictured and reported in the Mütter Lecture for 1901 (Am. Jour. Med. Sci., September, 1902, 398). Quincke has since called attention to this same process as one of the dangers of indiscriminate lumbar puncture. ("Diseases of the Nervous System," edited by Church and translated from "Die Deutsche Klinik," D. Appleton & Co., 1908, p. 233).

12. I have recorded another case with 24 hours of artificial respiration, in my Mütter lecture, loc. cit.

13. Technical Methods of Performing Certain Cranial Operations, Surg., Gyn. and Obstet., March, 1908, 237.

elevation exerted during the approach to the hypophysis below the contralateral hemisphere.

Dr. Lewis L. Reford and I have found that this method of Paulesco's, with some minor modifications of our own, is a most ideal way of exposing the pituitary body, at least in dogs.[14] We have found too in corroboration of his experiments that the hypophysis is essential to life—a clean, simple, bloodless extirpation, if total, being followed by death in about 48 hours. To the loss of just what one of the three portions of the gland, which Schäfer and Herring have described, this is due, we are as yet unaware, but the knowledge is enough to call a halt for the time being in attempted hypophyseal extirpations for tumor. It is the case of the thyroid and myxedema, the parathyroid and tetany, over again.

GASSERIAN GANGLION OPERATIONS

In some intracranial operations, however, the definite indications and necessary technical methods are well established—in no operation more definitely than that for trigeminal neuralgia of the major form. Here, although a certain amount of pressure against the temporal lobe is essential to a perfect exposure of the ganglion, this pressure is made against a brain not already under tension, as when a tumor is present, but against one susceptible of a certain amount of compression: hence in these operations the principle of dislocation need not be taken into account.

There is an element of danger, however, in too great pressure, and I think it can not be questioned but that the high temporal operation, so courageously originated some years ago by Hartley and Krause, entails more risk on this score than the more recent and lower methods of approach.

The degree of compression can be estimated if a careful chart of the pulse-rate be kept during the operation, for the vagus effect, shown by a retardation of pulse-rate, is proportionate to the degree of pressure-transmission against the medulla. In my earlier cases a pulse-rate as low as 60 per minute was not infrequent during the progress of the manipulations: this, however, has not occurred of late, doubtless through the experience gained in carrying out the enucleation through a very low and shallow opening.

Krause a year ago reported seven deaths in his series of 51 operations, and in all the fatal cases contusion of the temporal lobe was found postmortem—an evidence, I think, of the undue elevation necessitated by the high method of approach. I am able at the present time to report 74 ganglion operations, with only two deaths—both of the fatalities having occurred early in the series at a time when the effort was invariably made toward complete enucleation.

At present the procedure is greatly simplified by the avulsion from the pons of the sensory root alone, the ganglion being left in its bed with a half-inch gap between its posterior border and its original pontine attachment—a space which, even granting the possibility of central regeneration, could hardly be bridged by a new nerve. I think the method is preferable to the simple section of the nerve as proposed by Spiller and Frazier, not only for the reason given above, but also because it is possible to hook out the sensory foot intact, even in the many cases in which it is difficult or impossible to bring the structure sufficiently well into view to justify its actual division.

In the approach to the ganglion the incision (Fig. 14) should be so placed as to avoid (Fig. 15) the obtrusive droop of the brow which was an unavoidable consequence of the older methods owing to unilateral paralysis of the frontalis muscle. Similarly a careful closure of temporal muscle, fascia, and galea aponeurotica, can entirely prevent the objectionable flattening of the temporal region in consequence of atrophy of the muscle. Often the incision may be absolutely invisible a day or so after the sutures are removed (Fig. 16). The area of anesthesia remains permanent (Fig. 17); and the return of sensation to the forehead, or its retention there wholly or in part after the operation, indicates only a partial success and a possibility of return of pain in the ophthalmic division. There is no authentic case of recurrence of neuralgia after total extirpation or complete removal of the sensory root.

In all surgery I know of no more satisfactory measure than a successful ganglion operation nor of one which more certainly and more permanently relieves a larger measure of incapacitating pain. However, no one should attempt these operations who has not seen to the education of his own and his assisant's reflexes to the highest possible degree in the performance of every particular step by operations on animals and by constant and repeated practice on the cadaver. Otherwise it is much safer for him to cling to the methods of temporary relief through peripheral operations, whether they be restricted to the injection into the nerves of mordants or to the removal of such of the branches as can be with drawn without leaving the patient's face scarred—something the ganglion operation does not, or should not, do.

SUMMARY

I have attempted to elucidate some matters in regard to a branch of surgery which in its present formative stage can only be safely undertaken with the best possible understanding of neurology. The few technical points which I have chosen to emphasize are:

1. The continuous auscultation of the heart-beat and respiration during anesthesia.
2. The subtemporal decompressive operation as an early measure and a step preliminary to a possible subsequent tumor extirpation.
3. The dangers of lumbar puncture in the presence of a degree of subtentorial pressure sufficient to produce a cerebello-medullary foraminal hernia.
4. The value of a continuous lumbar drain during the course of explorations for lesions of the hemispheres.
5. The principle of outward dislocation of normal tissue to avoid the risks of compression or mutilation during deep explorations.
6. The satisfaction of such intracranial procedures as the ganglion operation for trigeminal neuralgia when once they are put on a basis of comparative safety.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CUSHING, HARTLEY, M'KERNON AND COAKLEY*

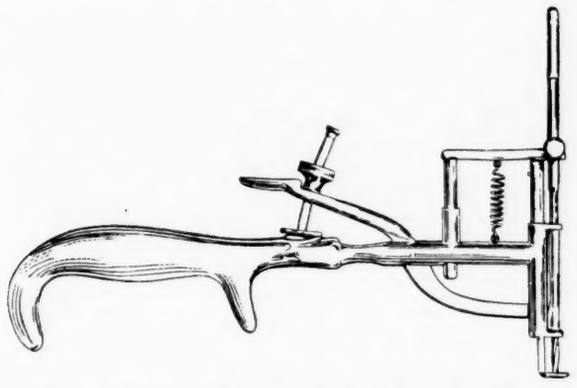
DR. JOHN B. MURPHY, Chicago: The important lesson all of these papers bring to us is that there is here a splendid field for excellent work, to be explored by trained hands, and

14. Technical experience with difficult procedures such as this (and I may include the ganglion operation) can be acquired in no way so satisfactorily as by practice on living animals. Although the mere anatomic relations must be learned on the human cadaver before the operation can be transferred to man, nevertheless the experience of handling the central nervous tissues, of stopping bleeding from bone, membranes and brain, can be and should be acquired on the lower animals.

* The papers of Drs. Hartley, McKernon and Coakley appeared in THE JOURNAL last week.

that no other should attempt it. I wish to call attention to a few matters unconnected with the technic of these operations. The ligature is splendid for the control of hemorrhage. Ligation of the external carotid can be accomplished in a few seconds, and in one condition particularly this ligation has been neglected for a great many years at a great life cost, and that is in hemorrhage from the middle meningeal artery. The general practitioner who does not do much surgery can ligate the external carotid artery the moment he notes the first symptoms of hemorrhage of the middle meningeal artery. These symptoms are so clear-cut that the diagnosis can readily be made. One does not have to hurry with the intracranial operation or do it under unfavorable conditions, because after ligation of the external carotid artery one can do the operation when the patient is in a favorable condition for the removal or relief of the compression. An instrument devised by Dr. Neff is arranged to fit itself to any depth of cranium. It is an ordinary revolving drill and can be directed in any line desired. It does very good work. I have found no very satisfactory machine for cutting the cranium.

The small size of the flap has hampered operations of this kind. That was brought out by Drs. Cushing and Hartley, showing that we may have a large-sized flap, but we must not have a profuse hemorrhage, because that is the greatest danger in all of these operations. The next important matter referred to was the palpation and examination of the brain after the dura mater had been opened. The experienced hand frequently can locate an encapsulated tumor or cyst. We have devised a double needle which has a blunt probe end and an



Early model of cranial drill devised by Dr. Neff, referred to by Dr. Murphy.

opening so that when it is withdrawn one-sixteenth of an inch the lumen of the needle is opened and the contents of the cyst can easily be withdrawn. By keeping the opening closed until the capsule is punctured it is easy to withdraw any fluid.

Another practical matter is the advantage of the peripheral sacral cistern in drainage. In the infections with accumulations in the cerebrospinal tract you can avail yourself of the large sacral cistern or of the cerebellar cistern for the relief of pressure. The significance of the closure of the foramen of Majendie lies in the production of atrophy of the optic nerve—central hydrocephalus without peripheral hydrocephalus; if that continues optic atrophy always results and persists because regeneration is impossible. This operation I performed in 1896, by opening and establishing a communication between the central and peripheral cisterns. In the central compressions of the optic nerve it was found that the re-establishment of this opening would prevent atrophy of that nerve. I paid a very severe price recently in operating on a case of ependymal spina bifida with paralysis of the lower extremity. The foramen of Majendie unfortunately was closed. I noticed that the child had central accumulation in the ventricles, but I felt that the foramen of Majendie was open and I permitted the patient to return home. To my horror and surprise, within six weeks, I was notified that vision had entirely disappeared. There was a central accumulation and a complete atrophy before I was notified, when I could have easily—it is not a difficult operation—have resected a V-shaped piece of the velum.

DR. A. JANSEN, Berlin: Like Dr. Coakley, I have seen very few cases of cerebral complication. In my observation of about 800 operations on accessory sinuses I saw three patients, on whom operation had not been done, with purulent meningitis, and about 6 cases of large extradural abscesses. There was no case of brain abscess, and only one of a severe serous encephalomeningitis with unconsciousness, lasting several days. The result was recovery after a purulent focus in the posterior ethmoidal cells, near the optic foramen, had been emptied. When an operation is indicated on account of suppuration of the accessory sinuses, I have little fear of cerebral complications. This comes into consideration only when there is severe pain and other indications of retention of pus. I should like to call attention to the importance of serous meningitis and encephalomeningitis in their relation to purulent meningitis, and also to the fact that that purulent meningitis has been cured in a number of cases. Finally, I desire to call attention to the importance of the disturbances caused by cerebral complications affecting the vestibularis, appearing as disease of the nerve, basis or central organ (Deiters' nucleus). The principal lesions to be taken into consideration are abscess of the cerebellum or tumor of the auditory nerve. The complication of tumor of the auditory nerve with purulent labyrinthitis is especially hard to diagnose. In several such cases, lumbar puncture showed pneumococci in the fluid. The postmortem in one case showed an inoperable tumor of the auditory nerve, which had destroyed the cerebellum as far as the fourth ventricle. Nystagmus varies according to whether the peripheral end organ, the nerve, or the central organ is attacked. In the affection of the end organ, nystagmus is directed toward the healthy side of the head. In my case of tumor of the auditory nerve and in several abscesses of the cerebellum, it was directed toward both sides, but it varied. In looking toward the diseased side, the excursions were very extensive but infrequent; but in looking toward the healthy side the movements were very quick and minute. These differences seem to me to be of value in the diagnosis of tumor of the auditory nerve and suppuration of the labyrinth.

DR. V. J. BACCUS, Chicago: Since asepsis in the cranial region is even more important than in the abdominal cavity, attempts have been made to secure a perfect aseptic isolation of the operative field. Long ago Fenger and Murphy, while operating on the head, isolated the field of operation by carrying the rest of the aseptic sheet over the anesthetizer. In the lantern-slide demonstration of operative technic on the skull shown here, no provision was made to isolate the head from the nose and mouth of the patient and the masks and hands of the anesthetizer. This can readily be accomplished by encircling the head with the aseptic sheet and resting it on vertical table supports. The next important factor in exploratory operation on the cranium is to make a large flap. The ligation of the external carotid as recommended by Dr. Murphy need not be applied to all cases of skull surgery, as a routine procedure. According to statistics, the majority of surgeons do not ligate the external carotid artery as a preliminary step. When there is a possibility of injury to the middle meningeal artery, as in operating for the removal of the Gasserian ganglion, it may be necessary to resort to ligation of the external carotid.

DR. ROBERT F. WEIR, New York: Those of you who have lived long enough will, perhaps, remember the birth of modern brain surgery. In 1875-80, thanks to the urgent encouragement of some of my friends in neurologic practice, I was led to enter on this field. It was not a long invasion, because it dawned on me early that I was attacking tumors of the brain, most of which were malignant or which were local manifestations of a severe general disorder, such as tuberculosis and cancer. I learned soon that I was doing a very dangerous operation, and that I could give the patient only a comparatively short prolongation of life. It discouraged me, I admit. Also the results in connection with epilepsy were not very satisfactory as operations were then done. My zeal was not, however, quenched, and I entered on the work in other directions, such as entering the substance of the brain in cases of deep hemorrhages, or exposing by lifting up the brain en masse for traumatic hemorrhage at its base on one or both

sides, or removing large surfaces of bone for the purpose of reaching and draining a suppurative meningitis. The great discouragement, however, I met brought me to the termination of my "brain" career and my enthusiasm departed and led me to go in other surgical directions.

As the outcome of my short experience, running over five or six years, three things of value have remained up to the present time. These have been alluded to in the admirable papers presented here to-day. The first was the rubber band around the head. We tried many ways to stop the annoying hemorrhage from the scalp. The rubber band I first resorted to at the suggestion of Dr. M. Allen Starr and it proved of such value as to retain its place in surgery. The second thing was the use of celluloid plates to fill in defects in the skull where bone had been destroyed by earlier operations, such as by multiple trephining or by grooving or by chiseling. I resorted to the use of these plates, perforated or non-perforated, also in fractures as well as in the brain tumor operations, following the example of the German surgeon, Fraenkel, and found their use very satisfactory. In one instance I kept track for five years of a patient in whom it was inserted for a large opening in the skull and found no disturbance arising from its retention. Dr. Cushing has alluded to the outcome of our experience of two unsuccessful attempts to find the tumor after a cerebral exposure. We succeeded here to an unexpected degree, however, in relieving the patient of distressing symptoms and advised then that such a procedure should be carried out in subsequent cases, which has been done to a large extent in recent years.

DR. WILLY MEYER, New York: On the basis of personal experience I favor proceeding in the same way in the posterior fossa of the skull as in other parts of the skull, namely, by arranging for an easy access to the brain by a wide removal of bone—wider than is usually advocated. It has been advised that operation for tumor of the occipital region be done in two stages, also that access to it, especially to those tumors situated at the ponto-cerebellar angle, be gained by partial or total removal of the respective cerebellar hemisphere. This advice, it seems to me, should not be accepted without thorough discussion. A number of such operations in two stages are on record in which the patients died shortly after the bone operation had been completed, and the tumor was never exposed. In the interest of asepsis, it seems to me, we should try to get through with the work in one sitting. Furthermore, it stands to reason that, if we can accomplish our aim with the cerebellum left intact, this must mean a gain to the patient.

With these points in view, and inspired by the excellent work of Cushing, Hartley and Frazier on this side of the Atlantic and of Krause abroad, I recently undertook an operation for tumor of the left auditory nerve in a girl, 27 years old. I do not think that osteoplastic operation can ever be done to advantage in this region, mainly on account of our inability to control hemorrhage properly, which, as is well known to those familiar with this kind of work, may prove alarming at times. (I would mention parenthetically that I have found Horsley's wax of great help in controlling hemorrhage in these cases.) Therefore, after having formed and turned down a large horseshoe-shaped skin-muscle-periosteal flap, and, according to Cushing, dividing it in the middle, I removed the entire occipital bone, first thinning it with a grooved chisel, then biting it with rongeur forceps. Of course, I carefully avoided the external occipital protuberance. The border of the foramen occipitale magnum was fully exposed. Then followed double ligature and division of the longitudinal sinus, heart-shaped incision of the dura mater and turning down of the flap. Now the entire cerebellum was before our eyes. With the help of a long brain spatula I reached the internal auditory foramen and, with the electric reflector, clearly saw the tumor, of the size of a small hickory nut, involving the auditory and facial nerves. This was bluntly removed. Acute edema of the brain prevented the proper return of the dura mater flap. The latter just sufficed to cover somewhat more than the lower half of the cerebellum. Injury to the exposed brain from the irregular, roughened occipital protuberance was carefully guarded against by gauze tamponade. The skin flap was sutured in place. The patient made a good recovery. Having been almost totally blind before operation, with staggering gait and all the other symptoms of brain tumor, she is now able to read almost the smallest print. Her gait is improving steadily; she has done some needlework within the last few weeks, and we may now hope that she will go on to complete recovery. This case shows that easy access to the cerebellum obtained by the removal of a large piece of bone enables us to avoid pressure injury to the medulla or pons and renders unnecessary the removal of portions of the cerebellar hemisphere.

DR. HARVEY CUSHING, New York: Widely different operative methods have been advocated in this morning's session by the different speakers—methods which have the same end in view, namely, the most rapid way of entering the skull compatible with perfect safety. It goes to show partly that the individual needs of one operator are not necessarily those of another, and partly that familiarity with a given set of instruments breeds facility in their use. After all, the best osteoplastic method of exploration is chiefly a matter of technical interest. What those of us who are interested in neurologic surgery are trying to do is not so much to perfect methods of rapidly laying bare the surface of the brain as to perfect our ability to diagnose a cerebral lesion and to evolve the proper methods of dealing with it when once the skull has been opened. We are only at the beginning of these matters, though strides forward are being made daily by the leaders in this work. It does not make any difference whether the bone flap is turned down by one method or another—provided, indeed, a bone flap is necessary, and often in fact it is not. It is what is to be done on the inside that is vital, and for this some knowledge of neurology is absolutely necessary; and that is the plea I wish to make to-day—the necessity of a neurologic training for those who wish to follow this particular kind of work.

Dr. Weir's contributions to this field of surgery made twenty years ago are well known to all who have made themselves familiar with the early literature of the new cerebral surgery; but I think that he is a little too optimistic about some of these present endeavors of ours, and Dr. Murphy's unbounded enthusiasm must not make us go too fast. Thus, his anticipation of twenty-five extirpations of the pituitary body within the next year, if they are "successful," or, in other words, total, means unquestionably twenty-five deaths in the twenty-five cases, for recent work has shown that the pituitary body—or I may say a portion of the pituitary body—is absolutely essential to life.

DR. FRANK HARTLEY, New York: Two things of importance for the next year are the production of instruments which can be used by every one and of a simpler means of stopping hemorrhage. The various saws and drills which are used now, and which are necessary to do rapid work, require a long period of tuition before one can use them safely. Therefore, I think that it would be a great advantage to have, in the first place, instruments which could be used by any one with perfect ease and safety. In the second place, I think that the thing which will advance cerebral surgery more than any other will be some simple method of stopping hemorrhage. As soon as we stop the hemorrhage, we diminish the shock; when we diminish the shock and stop the hemorrhage, we can spend a time in enucleating the growth from the cerebellum or cerebrum or whatever point we are trying to reach.

DR. CHARLES H. FRAZIER, Philadelphia: I feel very much as Dr. Cushing does about the development of cranial surgery. We are just making a beginning again in this field, it seems to me, after the setback which the work received at the hands of the German surgeons, notably von Bergmann, not many years ago. We have accomplished certain things, such as the development, I might almost say perfection, of the technic of exploratory operations for lesions anterior to the tentorium cerebelli, and the technic of operations on the Gasserian ganglion. As to operations for lesions posterior to the tentorium cerebelli the technic seems to me in many ways deficient. We have not, as Dr. Hartley pointed out, discovered a way of adequately controlling hemorrhage, and, no matter what efforts

we make, hemorrhage may be so profuse as to become alarming in a few minutes after the operation has been begun.

We have heard nothing to-day of the two-stage feature of cranial operations, and I take it that it has been very largely abandoned, and, I think, properly so. By means of blood-pressure observations we can determine with reasonable accuracy the condition of the patient, and there is no reason why, once the tumor or lesion has been exposed, we should not at once proceed to its removal. The dangers of infection from reopening the wound and of a second anesthetization are so great as to make the two-stage operation absolutely unjustifiable. The decompressive operation has become so popular of late that there is a danger of its adoption in cases in which an exploratory operation is clearly indicated. Although decompression entails less risk to the patient, it is less difficult and requires less experience. When there is the least suspicion of the presence and location of a lesion, it is the surgeon's duty first to explore the region under suspicion; failing to find it, he may then conclude the operation with the removal of as much of the dura and bone as may be necessary to effect decompression. If this course is not adopted, many operable lesions will be overlooked and the percentage of absolute recoveries proportionately decreased.

DR. C. G. COAKLEY, New York: I did not go into the matter of deaths following operation at all. I merely spoke of the cases of sinus disease which in the last few years were almost invariably fatal because no operation was done; but the tendency now is to operate and a certain proportion of these patients will recover that would have died.

DECAPSULATION OF THE KIDNEYS FOR CHRONIC BRIGHT'S DISEASE

WITH A REPORT OF THE RESULTS, IMMEDIATE AND REMOTE, OBTAINED IN 102 CASES THUS TREATED*

GEORGE M. EDEBOHLS, M.D.

NEW YORK

When, in 1901, I suggested treating chronic Bright's disease by decapsulation of the kidneys, I placed myself under a moral obligation to report the results after a sufficient length of time had elapsed. In fulfilment of this obligation the present report is submitted:

The working theory on which I based my procedure of renal decapsulation for chronic Bright's disease was that by the removal of the impervious capsule an opportunity was created for the formation of new vascular connections between the blood vessels supplying the secreting structures of the kidney on the one hand and the blood vessels and tissues surrounding the kidney on the other. An additional blood supply is thus created for the kidney. The increased blood supply and activity of circulation are depended on to improve the working coefficient and gradually to restore the health of the kidney.

My observations on the kidneys of some of my patients who have died months and years after decapsulation, or whose kidneys I have decapsulated a second—and in one instance a third—time, have invariably demonstrated the formation of a more or less abundant new blood supply as the result of operation. While the creation of a new blood supply to the kidney readily explains the clinically established fact of continued and lasting improvement in the work of a diseased kidney after decapsulation, it fails to explain fully and satisfactorily the immediate beneficial effects so often witnessed. I have never in any of my operations for chronic Bright's disease found the capsule tightly stretched and compressing the kidney. Generally it fits the kidney, and sometimes the kidney even appears to be somewhat shrivelled or contracted within the loosely fitting capsule. Even in far-advanced chronic interstitial nephritis with greatly thickened capsule, the reduction in size of the kidney appears to be due rather to contraction of the new fibrous interstitial tissue of the kidney itself than to compression of the capsule. I believe that the immediate good effects of decapsulation can be explained by the necessary manipulation, amounting in reality to a massage of the kidney, during operation. The immediate stimulation of the existing blood supply of the kidney thus effected, supplemented by the relief to congestion afforded by the direct abstraction of more or less blood from the organ during operation, suffices for the immediate needs of the kidney and carries it along until its supplementary new circulation becomes established. If we can cure chronic Bright's disease by renal decapsulation we can well afford to wait until time and further observation bring the explanation of the exact physiologic effects of the operation.

One invariable effect of renal decapsulation is the formation of a new capsule. This becomes distinctly organized in from three weeks to three months, is sometimes thicker, sometimes thinner, but always more succulent and vascular than the original. It has been suggested that this new capsule must inevitably contract and lead to injurious compression of the kidney with a return of the symptoms. This argument is not based on actual observation, nor is it in harmony with the results of animal experimentation, or with the clinical facts. I now give but little thought to the question of possible danger of contraction of the new capsule. The immediate effect of decapsulation is to increase the daily output of urea and cause the disappearance or lessening of uremic manifestations. I have known a daily excretion of 6 grams or less of urea, prior to operation, to be increased to a steady output of 30 to 35 grams within a month after operation.

Renal decapsulation enables any given kidney to do the best work which it is possible for that particular kidney to do. I now decapsulate every kidney operated on for any purpose, and believe that the other kidney should be explored and decapsulated before completing a nephrectomy. For the purposes of this report the diseases of the kidney are classified as: first, interstitial nephritis, those cases in which the gross evidences of inflammation of the connective tissue of the kidney predominate; second, parenchymatous nephritis, those in which the involvement of the secretory apparatus forms the salient feature; and, third, diffuse nephritis, those inflammations of the kidney characterized by implication in fairly equal degree of both the parenchyma and the connective tissue of the organ.

The diagnosis of chronic nephritis on the living subject is easy after some experience, the pathologic changes being more appreciable with the blood circulating through the kidney than they are after death. It is easy to recognize in the adherent capsule, nodulation, granular condition of the subcapsular surface, shrinking, unequal contraction, and occasional cyst formation, a chronic interstitial nephritis; or by the enlargement, cloudy swelling, mottling, and discolorations due to

---

* Owing to the illness of the late Dr. Edebohls, which prevented his attendance at the Section on Surgery and Anatomy of the American Medical Association, Fifty-ninth Annual Session, Chicago, June, 1908, this paper was read by Dr. Samuel Lloyd. Because of lack of space, the article is here abbreviated by the omission of the elaborate bibliography which appears in the Transactions of the Section and in the author's reprints.

circulatory and degenerative changes, a chronic parenchymatous nephritis; or by the thickening, general or localized, of the capsule, and the secondary inflammatory changes in the perirenal fat common to both varieties, a chronic diffuse nephritis. The variations in density and hardness, quite frequently varying widely in different parts of the same organ, are also readily appreciated. I now find no difficulty in promptly determining at operation whether or not a kidney is affected with chronic Bright's disease.

I now advise renal decapsulation for every sufferer who consults me for chronic Bright's disease, and who has a reasonable expectation of not less than a month of life without operation. The three conditions which lead me to advise renal decapsulation are: First, the clear and unequivocal establishment of the diagnosis of chronic Bright's disease; second, the absence in a given case of absolute contraindications to any operation; third, the possibility of securing the services of a surgeon practically familiar with the surgery of the kidney.

As soon as a nephritis has become chronic it is an absolute indication for decapsulation. The earlier in the course of chronic nephritis an operation is performed the better will be the patient's chances of a perfect cure. Renal decapsulation is indicated in all varieties of chronic nephritis. I no longer advise against operation on account of advanced age, provided the patient be otherwise in reasonably fair condition. It must be borne in mind that all patients with chronic Bright's disease have more or less hypertrophy of the heart. As long as the enlargement is mainly hypertrophic and not due to dilatation, and as long as the hypertrophy is concentric, an anesthetic may be administered with a reasonable degree of safety. It is only when dilatation of the heart predominates over the hypertrophy that the danger of sudden death from acute dilatation is ever present, and no general anesthetic should be administered to such a patient. In my opinion the most ominous auscultatory sign of predominant dilatation of the heart and danger of sudden death is insufficiency of the aortic valves, as denoted by an intermittent aortic regurgitant murmur occurring every third, fourth, or fifth beat, and even less frequently. When this condition is clearly present and can not be removed by suitable medication, the patient is very near the end of life and I advise against operation. During the course of recent years I have had the unexpected pleasure a number of times, on examining patients at periods remote from operation, of finding that very pronounced cardiac hypertrophies and derangements had become totally insignificant, and in some cases had even entirely disappeared, as the health of the kidneys was gradually regained. These changes for the better in the condition of the heart I have come to regard as the surest indication that the health of the kidneys is improving.

Retinitis albuminurica demands careful consideration in determining for or against renal decapsulation. Edema or dropsy of the retina must be differentiated from true retinitis with hemorrhage or exudates. The former may disappear, the same as a dropsy in any other part of the body. The importance of true retinitis albuminurica in relation to renal decapsulation lies in the fact that it is one of the late manifestations of chronic Bright's disease. Its occurrence signifies that the general changes produced throughout the body by the disease are so far advanced that they will cause death, even though the function and health of the kidneys can be restored by operation. It also indicates such widespread disease of the vascular system that the danger of rupture of blood vessels in any part of the body is always imminent. Among the first 72 patients, 9 had retinitis albuminurica at the time of operation. The unfavorable outcome in these cases has led me for the past three years to decline to operate on patients who had well-marked albuminuric retinitis. The only point that requires emphasis in the operation is the necessity of securing union by first intention.

The changes in the patient's condition and general health after decapsulation are nearly always impressive, and in some cases simply marvellous. The improvement is progressive, continuing and increasing even after the patient has resumed his usual avocation. This is due to the improved work of the kidneys, as denoted especially by the increased daily urea output.

My own experience with renal redecapsulation has thus far not been very encouraging. Were it not for the impression created by the case of Peabody, I should feel opposed to further trial of a second decapsulation in cases in which the first operation failed to initiate the cure. The only indication for a second decapsulation that would appeal to me would be in the case of a patient acquiring a new chronic nephritis after having been entirely cured of a first chronic nephritis by the first decapsulation.

Renal decapsulation for puerperal convulsions of renal origin are really renal decapsulations for subacute or chronic nephritis, at least that has been my experience.

Whatever merit may be claimed for or accorded this report of the result of my renal decapsulations for chronic Bright's disease must be based entirely on the fidelity and persistence of purpose with which the histories and postoperative fortunes of my patients have been followed and recorded. This report embraces all my operations performed on the kidneys with the hope of curing or improving existing chronic Bright's disease up to the end of May, 1906, the patients numbering 102 all told. Nearly fifteen years have elapsed since the first operation, and fifteen months represent the shortest period of observation after operating in any of the surviving cases—an average of five years for each of the 102 cases has elapsed since operation. All but 3 of the 102 patients are fully accounted for; the 3 cases unaccounted for were lost sight of years ago.

With 99 of my 102 patients I have managed to keep in touch continuously from the day of operation until either the date of their death or the present day. In the case of those who died, I have succeeded in obtaining the exact date as well as the cause of death in each instance. The vast majority of my cases were private; scarcely half a dozen belong to the class of hospital-ward cases. This has been of material assistance in following the after history of these patients. The patients themselves have freely and voluntarily cooperated in the attempt to solve the question of the curability of chronic Bright's disease. Whenever I have failed to hear from a patient for a period of six months I have made inquiry either of the patient or of the attending physician. I consider myself exceptionally fortunate in having succeeded in obtaining from all but one or two a twenty-four-hour specimen of urine at fairly regular intervals of time since the operation. The last specimen of urine from all but three of the survivors has been obtained within the past few months.

SUMMARY OF CASES

Since the publication of my book in 1904 I have continued to follow and record the further histories and fortunes of my surviving patients, as well as of those operated on in 1904, 1905, and the first half of 1906. I have thus managed to keep together this entire clinical material as a compact whole. I fully realize that in order to obtain recognition and acceptance by the profession at large for the surgical treatment of Bright's disease a sufficiently large number of cases of chronic nephritis observed for a sufficient length of time after renal decapsulation was an absolute essential. I believe that this report will show that this purpose has now been fulfilled. This report will probably be my final one,[1] and it is hoped that it will be received and accepted by the profession in full and complete discharge of the moral obligation assumed by myself when I first proposed to treat chronic Bright's disease, as such, by surgical measures.

SEX

Of my 102 patients 50 were male and 52 female.

AGE

The youngest patient was 4½ years, the oldest 67 years of age. The average age of the 102 patients at the time of operation was 39 years and 8 months.

OCCUPATION

Notes concerning the occupation of patients were rarely made, the matter not being deemed of sufficient practical interest. Fourteen of my patients were themselves physicians, and five were immediate members of physicians' families.

HISTORY PRIOR TO OPERATION

The majority of the patients at and before the time of operation presented either all or the most serious of the well-known clinical features of the disease. Some suffered in one way or another without having such a pointed history as unmistakably to indicate chronic Bright's disease. A few were absolutely unaware of any serious impairment of health until the occurrence of paralysis, of retinitis albuminurica, of uremic convulsions, or the discovery of albumin and casts in the urine on application for life insurance brought them suddenly face to face with the fact that they were affected with a fatal malady. It is a well-known fact that chronic Bright's disease frequently develops and progresses in an insidious manner, so that the advanced and final stages of the malady are often reached before the patient is aware that there is anything greatly wrong.

PHYSICAL CONDITION AT TIME OF OPERATION

Equally great with the differences in the symptoms produced by the disease were the physical manifestations and objective signs presented by the various patients on examination prior to operation. In comparatively few there were absolutely no manifestations of chronic nephritis except such as examination of the urine revealed. Others, again, suffered from all conceivable ravages of the disease in distant parts of the body—the brain, the visual organs, the heart and lungs, the digestive system, etc. Between the two extremes mentioned all shades of variation were encountered.

LENGTH OF EXISTENCE OF CHRONIC BRIGHT'S DISEASE PRIOR TO OPERATION

One of the most difficult things to determine is the exact date of the beginning of chronic nephritis. Perhaps the only time when this can be done with absolute exactness is when the chronic nephritis is the outcome or the continuation of an acute nephritis occurring either as a primary affection or as a complication of other diseases: influenza, scarlatina, typhoid fever, diphtheria and other general infections in which the kidneys are liable to become involved. Even then our conclusion that the nephritis dates from such an event may not be correct. The patient may have had chronic nephritis prior to the occurrence of the infectious disease, and the acute nephritis supposedly induced by the infection may in reality have been only an acute exacerbation of an already existing nephritis. Uncertainty in this respect pertains even to those cases of nephritis which the history indicates as having originated during a pregnancy.

Subject to the restrictions and limitations just stated, an attempt has been made to determine the probable duration of the chronic nephritis prior to operation in each patient from the length of time that the symptoms have existed. Judged by this admittedly defective standard, the average duration of chronic Bright's disease prior to operation in my 102 cases was four years. That the average duration, as thus estimated, falls far within the real limits is very certain.

In 85 of the 102 patients the period of time prior to operation at which examination of the urine first revealed the presence of chronic Bright's disease could be accurately determined. In these 85 patients the duration of chronic Bright's disease prior to operation, as known from urinalysis averaged 2 years and 11 months.

DATE OF OPERATION

The first of my 102 patients was operated on Nov. 29, 1892; the last on May 31, 1906. Nearly fifteen years have passed since the first operation, and fifteen months have elapsed between the last operation and the date of this report.

PLACE OF OPERATION

One hundred and nine operations were performed on the kidney or kidneys of my 102 patients, 7 of the patients having two kidney operations. The 109 operations were performed in the following places:

My private hospital	40
New York Postgraduate Hospital	37
Home of the patient	15
St. Francis Hospital, New York	14
Galt General Hospital, Galt, Ontario, Canada	1
Dr. H. D. Fry's private hospital, Washington, D. C.	1
Virginia Hospital, Richmond, Va	1

NATURE OF OPERATIONS PERFORMED ON THE KIDNEYS.

	Sittings.	Patients.	Operations.
Decapsulation of both kidneys	1	69	69
Redecapsulation of both kidneys	1	..	4
Decapsulation and fixation of both kidneys	1	17	17
Decapsulation and fixation of both kidneys	2	2	4
Decapsulation of both kidneys and fixation of right kidney	1	4	4
Decapsulation of one kidney and removal of the other	1	2	2
Decapsulation of one kidney and removal of the other	2	1	2
Decapsulation and fixation of right kidney	.	7	7

It will be noted that in 7 cases only one kidney, always the right, was operated on; while in 95 cases both kidneys were submitted to operation. Ninety-two of the 95 bilateral operations were performed at one sitting; in three instances the right and left kidneys were operated on at two separate sittings. Both kidneys of two patients were decapsulated twice, and both kidneys of one patient three times.

ANESTHETIC

The following list shows the number of operations in which each of several anesthetics was employed, alone or in combination:

Nitrous oxid and ether	63
Ether	19
Chloroform	11
Chloroform and ether	4
Chloroform and oxygen	1
Nitrous oxid and chloroform	1
Nitrous oxid, ether and chloroform	1
Nitrous oxid, oxygen, ether and chloroform	1
Nitrous oxid and oxygen	8

I have had the good fortune in the majority of these 109 operations to have at my command the services of specialists

1. EDITOR'S NOTE: Dr. Edebohls died Aug. 8, 1908.

and acknowledged experts in the administration of anesthetics, and when such was the case the choice of anesthetic was left with the anesthetist. I can see no good reason, however, why any surgeon should not use in his kidney operations the same anesthetic to which he is accustomed in his operative work generally. To this broad rule there are exceptions, special reasons for the preference of a particular anesthetic being now and then given by the predominance of particular complications, especially those affecting the heart, lungs and vascular system. Under these conditions the choice of anesthetic must be made on generally understood and accepted principles, and it should always be borne in mind that in operations on the kidneys of patients suffering from chronic nephritis the danger is, broadly speaking, greater from the anesthesia than from the operation.

ADDITIONAL OPERATIONS

A number of operations additional to the kidney operations were performed by me on a certain proportion of the 102 patients. The additional operations, although many of them were of a severe character, were attended with no mortality. In some instances the kidney and the additional operation or operations were performed at the same sitting; in some the additional operation or operations either antedated or followed operation on the kidneys.

VARIETY OF NEPHRITIS AS ESTABLISHED AT OPERATION

Right and left chronic interstitial	31
Left chronic interstitial, right kidney normal	4
Right chronic interstitial, left kidney normal	1
Right and left chronic diffuse	34
Left chronic diffuse, right kidney normal	3
Right chronic interstitial, left chronic diffuse	6
Right and left chronic parenchymatous	16
Right chronic diffuse, left kidney not operated on	1
Right chronic interstitial, left kidney not operated on	6

The only difficulty in the classification of the variety of nephritis that presented itself was in the cases of three patients whose kidneys were decapsulated for the cure of puerperal convulsions. In these three cases a subacute parenchymatous nephritis was encountered. As there was much evidence, however, both from the condition of the kidneys and in one case from the history of the patient, that the subacute nephritis encountered at operation was but an exacerbation of a previously existing chronic nephritis, these cases have been classified under the head of chronic parenchymatous nephritis.

From the above classification it will be seen that one variety of nephritis may affect one kidney, and a second variety the other kidney of the same individual—right chronic interstitial and left chronic diffuse nephritis having been observed no less than six times.

UNILATERAL NEPHRITIS

Chronic nephritis affecting one kidney only was noted in a strikingly large proportion of the 102 cases. In 8 patients, in whom both kidneys were exposed at operation, one kidney was found healthy and the other diseased, the unilateral chronic nephritis being of the interstitial variety in 5, and of the diffuse variety in 3 cases. Of 7 patients in whom only one kidney was operated on, 4 were completely cured of their former chronic interstitial nephritis and have remained cured for periods of time varying between five and fourteen years; therefore, these 4 patients must either be regarded as having had a healthy kidney on the side not operated on, or, if it be assumed that the second kidney also was diseased at the time of operation, the decapsulation of one of a pair of diseased kidneys must be credited not alone with restoring the health of the kidney operated on, but of that of its fellow kidney as well. I incline to the former of these two explanations as the more probable. In 8 of the 102 cases, therefore, the chronic nephritis was proved beyond a reasonable doubt to be confined to one kidney, and that such was the case in at least 4 other patients the final outcome makes extremely probable. These observations I am compelled to interpret as establishing beyond controversy the fact that chronic nephritis may be encountered as a unilateral affection in a hitherto unsuspected proportion of cases.

RENAL AND PERIRENAL CONDITIONS COMPLICATING THE CHRONIC NEPHRITIS

Polycystic degeneration of left kidney	3
Polycystic degeneration of right kidney	1
Bilateral pyelonephritis, with miliary abscesses	2
Unilateral pyelonephritis, with miliary abscesses	1
Left acute suppurative perinephritis	1
Right chronic perinephritis	5
Right and left chronic perinephritis	14

WOUND HEALING

Of the 205 lumbar incisions made in the 109 operations on these 102 patients, 200 healed by primary union throughout. The failure to obtain primary union in the remaining five incisions was due to the following causes:

One intractable patient infected both wounds by repeatedly tearing off all dressings	2
Breaking down of an acute perinephritis antedating operation	1
Suppuration of a deep perirenal hematoma	1
Slight leakage of urine from surface of kidney	1

In not a single case was the breaking down of the wound the result of infection introduced at operation.

ANALYSIS OF RESULTS

Of the 102 patients 10 died within two weeks following operation, 39 died at periods of time more or less remote from operation, 3 disappeared from observation after leaving the hospital, and 50 are known to be living.

OPERATIVE MORTALITY

The operative mortality may be stated as 9.8 per cent. In reality, however, as 7 patients were operated on twice, 109 operations were performed on one or both kidneys. One of these patients died after a second decapsulation. Figured in this way, there were 11 deaths in 109 renal decapsulations for chronic Bright's disease, an operative mortality of 10.1 per cent. In round numbers, therefore, my operative mortality was 10 per cent.

This 10 per cent. mortality is fairly attributable to the disease itself and to its complications rather than to the operation. Bilateral renal decapsulation could be performed by an expert in renal surgery on 100 perfectly healthy human beings without losing a single life. In judging my own mortality, the fact must be taken into consideration that for one reason or another I accepted for operation cases in which the fatal outcome was almost a foregone conclusion. Patients, as well as their physicians (the two sometimes represented in the same person), insisted that they were entitled to the benefit of the doubt, and requested or even demanded operation.

Six of the operative deaths occurred in the first 40, 5 in the last 69 operations. All of the 10 patients who died within fifteen days following operation were males. The average age of the 10 patients was 45 years and 6 months.

The average duration of chronic nephritis prior to operation in these 10 patients, as indicated by the symptoms, was 4 years 11.6 months; as known from urinalysis, 3 years 1.7 months.

Decapsulation of both kidneys at one sitting was performed on each of these 10 patients.

Of the 10 patients, 7 suffered from chronic interstitial nephritis, 2 from chronic diffuse nephritis, and one from chronic parenchymatous nephritis, the disease in every instance being bilateral.

The cause of death was acute dilatation of the heart in 4 cases, uremia in 3, cerebral hemorrhage and uremia in 1, acute dilatation of the heart and edema of the lungs in 1, and acute lobar pneumonia in 1.

LATER DEATHS

Thirty-nine patients died at periods of time more or less remote from operation and from causes in no wise connected with the operation; of these 26 were males and 13 females.

The average age of the 39 patients at the time of operation was 41 years and 10 months.

The average duration of chronic nephritis prior to operation in these 39 patients, as indicated by the symptoms, was 4

years 7.3 months; as known by urinalysis, 2 years 7 months.

Decapsulation of both kidneys was performed on 24 of these patients; decapsulation and fixation of both kidneys on 2; decapsulation of both kidneys with fixation of the right on 1; decapsulation and fixation of the right kidney on 1; decapsulation of the right kidney and removal of the left on 1.

Of the 39 patients, 17 suffered from right and left chronic interstitial nephritis; 1 from right chronic interstitial nephritis; 3 from right chronic interstitial and left chronic diffuse nephritis; 8 from right and left chronic diffuse nephritis; 2 from left chronic diffuse nephritis; 1 from right chronic diffuse nephritis, and 7 from right and left chronic parenchymatous nephritis.

Wound healing was by primary union throughout in each of the 77 incisions made on these 39 patients.

Of the 39 patients, 1 died as the result of abdominal hysterectomy eight years after her kidney operation; 1 died of an operation for ruptured tubal pregnancy one year after operation on her kidneys; 1 died of septic pneumonia due to suppurative coxitis; 1 died of chronic pleuropneumonia; 1 died of gangrene of the tonsils and palate following grip; 1 died of cerebral embolism in the course of grip; 1 died of heart failure and uremia in the course of grip; 3 died of cerebral hemorrhage; 1 died of suppurative pyelonephritis; 4 died of edema of the lungs; 1 died of endocarditis; 2 died of valvular disease of the heart; 4 died of acute dilatation of the heart; 1 died of diabetic gangrene of the lower extremities, and 16 died of uremia.

Of these 39 later deaths, 10 were due to causes that stood in no direct relation to chronic nephritis—2, for instance, died of diabetes. Three other patients succumbed to grip. Including these last 3 cases, 29 of the 39 later deaths may fairly be ascribed to chronic nephritis and to its sequelæ and complications.

The longest period of time between operation and death was eight years; the shortest, fifteen days. The average duration of life after operation was 1 year 4 months and 20 days.

In these 39 patients, 11 received no benefit from the operation; in 1, the possible benefit from operation was prevented by suppurative coxitis; the complications of the advanced stages of chronic Bright's disease nullified the benefits of operation in the remaining 10.

Four experienced slight and temporary improvement only. A peculiar feature of this temporary improvement consisted in the fact that the patient's general health and well-being were decidedly improved, so much so that three of the four who were bedridden for months preceding operation were able to return to work and to remain at work until within a very short time before death. This improvement in general health, however, was not accompanied by any improvement in the condition of the kidneys. Albumin and casts continued in the same or even greater abundance than before operation. The daily output of urea, however, was always greater than before operation, and the consequent lessening of uremia probably explains the improvement in general health and well-being. In other words, the functional activity of the kidneys was temporarily improved by decapsulation, although the fatal organic changes continued unchecked.

Eight patients experienced moderate improvement, the average duration of such improvement amounting to 1 year and 10 months.

Sixteen patients experienced decided improvement, lasting in 3 cases until death from causes other than chronic nephritis. The average duration of decided improvement for these 16 cases was 1 year and 2 months.

THE SURVIVORS

There are 53 survivors. The youngest was 4 years and 7 months, and the oldest was 67 years of age at the time of operation. The average age of the 53 survivors at the time of operation was 38 years and 11 months. An average period of fully five years for each of the survivors has elapsed since operation, making the average age of the survivors at the present time (September, 1907) 43 years and 11 months.

The average duration of chronic nephritis in the 53 survivors, as judged from the history and symptoms, was 3 years 6.9 months. The average period before operation at which albumin and casts were first discovered in the urine was 3 years 1.2 months.

The following operations were performed on the 53 survivors:

Decapsulation of both kidneys	25
Decapsulation and fixation of both kidneys	17
Decapsulation of both kidneys and fixation of right kidney	3
Decapsulation and fixation of right kidney	6
Decapsulation of right kidney and left nephrectomy	2

The 53 survivors had, and a number of them still have, the following varieties of nephritis:

Right and left chronic interstitial	7
Left chronic interstitial, right kidney normal	4
Right and left chronic diffuse	24
Left chronic diffuse, right kidney normal	1
Left chronic diffuse, right chronic interstitial	3
Right and left chronic parenchymatous	8
Right chronic interstitial, left kidney not operated on	6

The first of the 53 was operated on 14 years and 10 months ago; and the last, 1 year and 3 months ago. The average length of time since operation is a little over five years for each.

The histories of these 53 patients have been followed in all but three instances since the time of operation. In the three cases alluded to the final result is unknown. The life history of each of the remaining 50 has been obtained and recorded, and the final results to date of the 53 patients may be stated in a general way as follows:

Final result unknown	3
Unimproved, or but little improved	6
Improved	11
Cured	33

Before proceeding to an analysis of this list, it is but fair to state that the results are in reality a little better than indicated by the above figures. Thus, of 2 patients who died after operations performed by other surgeons one year and eight years respectively, following renal decapsulation, there is reason to believe that one was cured, while the other was certainly improved. Both of these patients now figure in the list of later deaths, instead of appearing among the survivors. There is also very little doubt in my mind that the number of cured patients will in the near future be increased by a few accessions from those now classed as improved.

Of the 6 survivors recorded as unimproved, only 1 has really experienced no amelioration of any kind. The other 5 all experienced improvement in either general health or in the urine, or in both. All of the 5, however, are at present in better health than before the operation. In 2 of the 5 an associated pulmonary tuberculosis precludes all hope of further betterment.

Of the 11 cases classed as improved, both the general health and the condition of the urine show steady and progressive improvement, continuous from the date of operation to the present day; 3 of the 11 appear to be on the eve of restoration to complete health, their general condition being good and their urine almost normal.

Finally, 33 patients have been completely cured of their former chronic nephritis as a result of the operation performed on their kidneys. In every case the urine has become normal at varying periods of time following the operation and, with the exception of four patients whose urine was found normal for the first time within a few months of this report, has remained normal for a period of six months and upward. These patients, with the four exceptions mentioned, have, therefore, fully met the requirements necessary to entitle them to be regarded as cured. These requirements are: "The urine must remain free from albumin and casts, and the daily urea output be normal, or approximately so, for a period of at least six months following the verification of the disappearance of albumin and casts, and the patient must be free from the symptoms of chronic Bright's disease from which he or she formerly suffered."

It should be added that the vast majority of my patients received no further treatment of any kind for their chronic nephritis after operation; they were not even subjected to the

usual restrictions of diet. Whatever benefit they received, therefore, must be ascribed solely to the effects of renal decapsulation.

As already stated, the cure of chronic nephritis is only started by renal decapsulation, and the element of time is essential to obtain the full advantages of the operation. In some patients the health of the kidneys was restored in a few months after operation, while in others the same result was reached only after a period of three years.

To prove that cure or improvement of chronic nephritis after renal decapsulation is due to the operation, it must be shown: First, that cure or improvement follows operation with practical uniformity; second, that improvement obtained by operation is steadily progressive in the majority of cases; third, that a cure once obtained is, as a rule, lasting. The first of these conditions has been fulfilled in 81 of the 102 patients; the second in an equal number, 48 of the number progressing steadily up to a certain point, varying with each case, but falling short of complete cure. That some of the 48 will eventually reach complete health I am very confident. This confidence is based on further experience and developments in connection with the "survivors" of my report of 1904. Of the 53 survivors in this report, the 17 who were classed in 1904 as cured are all alive and perfectly well at the present day; while of the 20 patients who were classed as improved, 4 have attained perfect health and now appear in the list of cures.

The third condition, that a cure once obtained must, as a rule, be lasting, has thus far been fulfilled to the extent to be detailed later on by every one of the 33 patients.

Fifteen of the women on the cured list were married at the time of operation; 4 have married since operation; 2 women have given birth to one child each since operation; a third woman has gone through two pregnancies, giving birth to three children. The five children are alive and well. The mothers suffered no kidney disturbance of any kind during pregnancy or since, and are to-day in the enjoyment of perfect health.

SUMMARY OF DATA RELATING TO CURED PATIENTS

These number 33—4 men, 28 women and 1 female child. The youngest cured patient was 4½ years old at the time of operation; the oldest, 67 years. The average age of the cured at the time of operation was 33 years. Five years, on an average, having elapsed since operation, the present average age of the cured is 38 years.

The average duration of chronic nephritis before operation was 2 years and 8 months for each of the 33 patients; comparison with the average duration before operation of 4 years for the total number of 102 patients; 4 years 11.6 months for the 10 patients who died within two weeks following operation; 4 years 7.3 months for the 39 later deaths; and 3 years 6.9 months for the 53 survivors, speaks louder than words for early operation.

The varieties of chronic nephritis of which these 33 patients were cured were as follows:

Right and left interstitial	5
Right interstitial, left kidney not operated on	4
Left interstitial, right kidney normal	4
Right and left diffuse	11
Left diffuse, right kidney normal	1
Right and left parenchymatous	6
Right interstitial, left diffuse	2

In 13 cases, therefore, the chronic nephritis was interstitial; in 12 diffuse; in 6 parenchymatous, and in 2 interstitial on the right side and diffuse on the left.

The shortest time between operation and cure was one month; the longest, 3 years; 18 patients recovered full health in less than a year after operation; 10 required between 1 and 2 years; 4 did not attain full health until between 2 and 3 years after operation; and in one case fully 3 years elapsed between operation and cure. The average time after operation at which full health of the kidneys was reached was 11 months for each of the 33 patients.

Deducting 11 months, the average time after operation at which the urine became normal, from 5 years, the average time since operation, gives an average period of health of 4 years and 1 month thus far gained for each of the 33 patients.

In the 33 cured patients, the average duration of chronic nephritis was 1 year and 10 months for each of the 13 interstitial cases; 3 years and 5 months for the 12 diffuse cases; 1 year and 1 month for the 6 parenchymatous cases; and 2 years for the 2 right interstitial and left diffuse cases.

The average length of time after operation at which the urine became normal was 6 months for the insterstitial cases; 1 year and 2 months for the parenchymatous cases; and 8 months for the right interstitial and left diffuse cases.

SUMMARY OF RESULTS AND REMARKS

The results obtained in my first 102 decapsulations of the kidneys for chronic Bright's disease have been detailed fully, frankly and without reservation.

In the first place, renal decapsulation for chronic Bright's disease may be charged with 10 deaths following the operation. Let us admit for the sake of argument that these 10 deaths were all due to operation—a matter by no means settled, as practically every one of the 10 patients was within a few weeks, if not days, of the natural termination of life by disease. These 10 deaths as a result of operation are fully offset by an equal or larger number of patients snatched from impending death by operation. At least 12 others of my patients, who were considered at death's door when I operated, have had months and years added to their lives by the operation, and a number of the 12 are alive and well to-day. The sum total of life added as a result of operation in these 12 cases very far exceeds the curtailment of life which the operation may have caused in the 10 patients who died soon after, as a result of operation. The added years of life, in addition, were for the greater part years of comparative health, comfort and usefulness, as compared with the days or weeks of suffering which, had operation not been performed, would have been the lot of the 10 unfortunates who died.

To put it another way: Of 22 sufferers from chronic nephritis who came to me for operation, and whose deaths were immediately imminent by virtue of the disease, 12 were saved by operation, while in 10 the attempt to save life failed.

Of the 39 remote deaths none were due to operation. Twenty-nine of the 39 patients ultimately died of chronic nephritis or its complications. Of these only 11 received no appreciable benefit from operation. The worst that can be charged against operation in these 11 cases is that the operation did no good; it certainly did no harm. Eighteen of the 29, as well as the 10 patients who finally died of causes other than chronic nephritis, were all more or less benefited by the operation, the duration of improvement experienced by these 28 patients amounting to a total of more than 33 years.

Of the surviving patients, even the 6 classed by me as unimproved have experienced such marked benefit in general health that, personally, each of the 6 is abundantly satisfied with the results of operation.

Next, of the 11 patients who have all experienced decided improvement in general health and in the condition of the urine as the result of operation, a number appear to be on the high road to complete health, and bid fair later on to augment the list of cures.

Finally we reach the 33 cures of chronic Bright's disease attained as a result of operation. These 33 cures alone would justify all the work that has been done, even if no benefit had accrued to the remainder of

my patients. The justification, in my opinion, will still hold good, even if some of the cases now classed as cured should relapse, or in the future become the victims of a new nephritis.

Of the entire 102 patients, therefore, 21 received no benefit from operation, while 81 patients experienced amelioration varying all the way from slight and temporary improvement to complete cure. In 12 cases the operation proved directly life-saving by rescuing the patient from impending death.

In judging the above results, the fact should be borne in mind that the immense majority of my patients came for operation only after all other measures and treatment had failed to arrest the progress of their chronic nephritis. A great number were on the very eve of dissolution, and the desperate character of my series of 102 cases will probably not be duplicated by any surgeon in the future. Better results than those recorded here will undoubtedly be obtained as soon as sufferers from chronic nephritis seek relief and cure in early operation.

In the meanwhile, these results, 33 cures among 99 patients whose ultimate fate is known—obtained in a hitherto incurable malady, and one which, according to the United States census of 1900, ranks sixth in the list of diseases causing death, not alone justifiy the surgical treatment of chronic Bright's disease, but establish that treatment as at present the main if not the only hope of a very large class of sufferers.

For the present, in view of the helplessness of medicine in the presence of established chronic Bright's disease, the advance in treatment represented by renal decapsulation should be welcomed by every physician called upon to treat chronic nephritis. Nor is the physician justified in taking the position that only after all other measures have failed will he resort to decapsulation. That is giving neither the operation nor his patient a fair chance, to which the latter at least is certainly entitled. For even at present I am able to affirm, as the result of experience, that renal decapsulation applied early in the course of a chronic nephritis, and in the absence of complications, is almost free from danger in expert hands, and is almost a certain cure.

That physicians are not unwilling on occasion to try in their own persons methods of treatment which promise more than those heretofore known to medical science, seems indicated by the fact that of my 102 patients no less than 14 were physicians, and 5 others were members of the immediate families of physicians. One physician and his wife were both operated on during the same afternoon.

Much of what has been said in this paper rests upon the assumption that the curability of chronic Bright's disease by decapsulation of the kidneys is a proved fact. Regarding it as such, I feel that my expectation and hopes of years ago have been in large measure realized, and that the promise of a yet fuller realization appears bright.

12 West Fiftieth Street.

The Dark Ages of Tuberculosis to End.—I have lived through many of the long, dark years of ignorance, hopelessness and apathy. . . . But I have lived also to see the dawn of the new knowledge, to see the fall of the death rate of tuberculosis, to see hundreds who have been rescued, to see whole communities growing up of men and women whose lives have been saved and who are engaged in saving the lives of others.——Dr. E. L. Trudeau.

THE SUTURE: ITS PLACE IN SURGERY *

HENRY O. MARCY, M.D.
BOSTON

The history of the ligature and the suture is, in a measure, the exponent of the history of surgery. Surgery may also be accepted as a fair exponent of the rise, fall and progress of civilization.

PREHISTORIC SURGERY

Always prominent in the very dim and shadowy past, two of the professions, with which the third is more or less intimately blended, come into bold relief. In the differentiation of duties, even in the tribal relations, there was set apart a liberal representation of the brighter intellects for determining the relation of man to his brother and to that which all men have believed more or less clearly, the possible after-life. The rules of living determined by these men assume more or less formal expression in the codes of laws of the state and the church. The physical needs of mankind became at once apparent, and these were ministered unto, in differentiation from either spiritual or political needs by the so-called medicine-men of the savage tribes and priests and soothsayers of the barbaric ages. The need for the care of wounds and injuries produced a class of those especially trained, who have been denominated surgeons.

GREEK AND ROMAN SURGERY

Homer clearly portrays the active, beneficent service of the military surgeon. The fragmentary history of the Egyptian and Assyrian civilizations clearly teaches the honorable part assigned to his service. Pompeii, although a suburban city, has yielded abundant evidence of the surgeon's art in both war and peace. Pompeiian frescoes portray his service. The instruments which he used are seen to-day in the great museum at Naples in considerable variety. This is as would be expected, since the mental processes act ever in the same accord, and a recognized need stimulates the meeting of the demand.

Roman civilization reached the climax of development in the early centuries of the Christian era, but, as in the case of Egypt, Assyria and Greece, unfortunately, many most important questions in regard to the development of the arts and sciences can at the best be only partially answered, since the storehouses of the most precious knowledge of the Romans were destroyed with the downfall of their civilization. We know, however, that even to-day we may learn much from the civil code and military regulations which dominated Rome's highest development. In both the civil and the military service the surgical profession was honored and the service rendered was of most signal value.

ANCIENT USE OF THE LIGATURE

The ligature played an important part in the armamentarium of Roman surgeons.

Celsus, living in the first century, one of the most remarkable of the Roman surgeons, gives special directions as to the use of sutures in a great variety of surgical affections. In illustration may be cited the pene-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908. Because of lack of space the article is here abbreviated by the omission of a history of sutures, but the complete article appears in the Transactions of the Section and in the author's reprints.

tration of the sac in the umbilical hernia of children with a needle armed with a double thread, the ligation being made on either side by close knots. Celsus described the ligature as of ancient origin and stated that it was used by the Alexandrian school of medicine, with the teachings of which he was apparently familiar.

Galen (131-201 A. D.) tied arteries on living subjects and experimented on animals to show the circulation of the blood. He foreshadowed the discoveries of Harvey and demonstrated by the double ligature of the artery on living animals that the artery contained blood and not air. For a variety of surgical purposes he ligatured arteries in continuity, but not in amputations.

AMBROSE PARÉ

Ambrose Paré was born in 1517. In 1552 he first tied the vessels of the leg in amputation. This brilliant man was then a surgeon in the army at the beginning of his notable career. Like many other notable discoveries, this was born of the inspiration of the moment. A prominent member of his own staff was severely wounded in the leg and Paré writes: "I had to finish the cutting of it off, which I did without applying hot irons."

One is almost tempted to stray from the subject of this paper in his sympathy for the great innovator, who, like many since his day, struggled against conservatism. It would be interesting to outline the battle royal which Paré fought to establish the principle and practice of the ligation of arteries in amputations.

Paré's one monumental contribution to surgery, his great book, lies open before me as I write. My copy, bearing date 1582, is in its original binding of calf, once held together by clasps. On the fly-leaf are the autographs of distinguished previous owners, and although in good preservation, its pages bear evidence of frequent use.

Paré's later life was crowned with many honors. He writes:

> God is my witness, and men are not ignorant of it, that I have labored more than forty years to throw light on the art of surgery and bring it to perfection, and in this labor I have striven so hard to attain my end that the ancients have nought to excel us save the discovery of first principles; and posterity will not be able to surpass us (be it said without offense) save by some additions such as are easily made to things already discovered.

PARÉ'S INTRODUCTION OF THE LIGATURE FOR ARTERIES

The fact that Paré did succeed in establishing on a firm basis the innovation of tying wounded arteries is far more noteworthy than would at first appear, since it also changed the mode of dressing of the wound. At this period gunshot wounds were treated with boiling oil, in the belief that the gunpowder in some way acted as a poison in the wound. It will be noted that the cautery effect of the boiling oil, although producing most agonizing suffering, caused the primary sterilization of the wound, and that there was an abundant leucocytic proliferation beneath the necrosed layer, which in a measure prevented subsequent infection.

VESALIUS AND HEISTER

Vesalius in the sixteenth century mentioned the ligature as a relic of the past, greatly underestimated in value because of the lack of anatomical knowledge.

Heister's Surgery was the text-book of continental Europe for two generations, and its study to-day will richly reward any student who would be the thorough master of his profession. In his last edition, 1739, he writes:

> The necessary apparatus for dressings seems by no means complete without Ligatures; Chords, Bonds and Strings, and these of different sorts, some fine, others coarse, strong, made either of flax, or hemp, or cloth, or silk, or horsehair, according to the nature of the disorder; for these things are almost constantly required.

HUNTER'S LIGATION OF EXTERNAL CAROTID

In 1785 John Hunter tied the external carotid in a buck. The antler of the side became cold, and he debated of its future existence; later it was warm and well nourished. Two weeks after, he killed the animal and found the ligature in place and the artery occluded, but the collateral circulation was increased so that the nutrition of the antler was restored. This was the foundation study which led to his advocacy and practice of the ligation of arteries for the cure of aneurism.

Dr. Wright Post of New York, one of Hunter's students, in 1796 performed Hunter's operation, the ligation of the femoral artery in aneurism, and in 1813 he successfully ligated the external iliac, the second operation of its kind to be performed.

HAIRE'S MODIFICATION OF THE LIGATION

Mr. Haire of England,[1] in 1786, introduced the method of cutting off both ends of the ligature applied to the artery close to the knot and letting the wound heal over it. This method was practiced by a considerable number of surgeons, but very naturally fell into disuse, because it was decidedly the exception to have primary union, since the wounds, as a rule, became infected.

LIGATURE MATERIALS

Ligature materials, linen and hemp, were known and used for a great many purposes at a very remote period, antedating written history. Flax ready prepared for spinning has been found with the remains of the cave-dwellers of Europe. Silk was used in China for centuries before the Christian era. The beautiful fabrics of the far East were in use in Rome during the first century and were often sold for an equal weight in gold. Cotton was cultivated in Egypt during the period of its early civilization. The surgeons of the early periods were furnished with a variety of material for ligature almost equal to the present.

In the Odyssey the strings of the old Greek harp are described as made from the twisted intestines of sheep. It is extremely probable that these strings were manufactured as the catgut of to-day is, since it is the connective tissue sheath of the intestine only which could have furnished suitable material. The ancient Egyptian harp is said to have been strung with a similar material. The celebrated Arabian writer Rhazes, who practiced surgery in Bagdad A. D. 900, described the stitching of wounds of the abdomen with the strings of the harp, and Albucasis describes the stitching together of wounds of the bowel with a fine thread made from the twisted intestine of an animal.

INTRODUCTION OF ANIMAL LIGATURES

More recently, the animal ligature was introduced by Dr. Physick of Philadelphia, in the year 1806, but no account of his experience was published until 1816. The history of its uses is a most interesting chapter. The surgeons for a generation in America, and to a less degree in England as well, ligated arteries extensively with absorbable material.

1. Hennen, John: Principles of Military Surgery, ed. 2, p. 181.

HORATIO GATES JAMESON

The profession is indebted to the really monumental scientific studies of Dr. Horatio Gates Jameson of Baltimore, one of the leading surgeons of the period.[2] His experimental studies were in a very large measure duplicated by Lord Lister a generation later. There is abundant evidence that Dr. Jameson was a singularly clean surgeon. His basic studies were made on various animals, and nearly all the wounds were evidently uninfected, since primary union was decidedly the rule. I have been at large pains to follow in detail the history of this extraordinary man as a surgeon, and I judge from his reports that it was the exception that suppuration ensued in his operative wounds made in fairly well vitalized structures.

Few men did so much to give credit to early American surgery as Dr. Jameson, who, from 1820 to 1840, carried the fame of Baltimore as a seat of medical and surgical research to all parts of the civilized world. This truly great surgeon was born in York, Pa., in the year 1778. His father, David Jameson, also a physician, had a most interesting and adventurous career. A native of Scotland and graduated doctor of medicine at the University of Edinburgh, he emigrated to Charleston, S. C., in 1740. He was accompanied on the voyage by Dr. Hugh Mercer, who settled at Fredericksburg, Va., and became a brigadier-general in the Continental army, losing his life, as is well known, at the battle of Princeton, in 1777.

Dr. David Jameson removed from Charleston and settled at York, Pa. He died at Shippensburg, in the same state, about the close of the century. He was a lieutenant-colonel in the French and Indian war and was badly wounded during that period in an engagement with the Indians. During the revolution he was colonel of the third battalion of York County Association. In 1842 the son gave a charming description of his home at York, in a Baltimore periodical; also an account of his father's voyage across the Atlantic, describing, among its hardships, the short allowance of musty bread and foul water and the rusty salt beef doled out, yet consumed by crew and passengers with avidity.

Dr. H. G. Jameson studied medicine under his father and began practice in 1795, at the early age of seventeen.

During the war of 1812 he held the office of surgeon to the United States troops at Baltimore, for which service his widow received a pension after his death.

He was physician to the city jail for several years; from 1814 to 1835 he was surgeon to Baltimore hospital, and from 1821 to 1835 he was consulting physician to the board of health.

In 1830, on special invitation, he visited Europe, sailing by the packet running from Baltimore to Germany, and read before the medical section of the Society of German Naturalists and Physicians, which met in September of that year at Hamburg, a paper on the "Noncontagiousness of Yellow Fever." He was the only American delegate on this occasion and the first American to attend these meetings, and he felt deeply the honor of his position. His paper was read in translation at the meeting and was published on his return, in his journal. During his brief stay of two months in Europe he traveled through various European countries, staying longest at Copenhagen, to the American representative at which city he bore dispatches from our government at Washington.

In 1835, while on his return from Texas, where he had purchased lands, he received and accepted an offer of a chair in and the presidency of the Ohio Medical College, at Cincinnati. His colleagues there were Drs. Gross, Drake, Rivers and J. B. Rogers, the last his late colleague at Baltimore. He removed thither with his family in October, 1835, and lectured during the ensuing session.

During a visit to New York he was taken suddenly ill, and died, Aug. 24, 1855, aged 76 years. His remains were brought back to Baltimore cemetery, corner of Gay street and Boundary avenue.

NEGLECT OF ANIMAL LIGATURES

I have gone to some pains in tracing the history of the ligature, since, in the light of modern knowledge, it teaches the reasons for success or failure in the treatment of wounds, all dependent on the then unknown factor of infection. This, in a general way, was in a measure understood; but the key which seemed at one time to lead to success appeared again to be utterly lost in the learned dissertations on inflammation—a condition which seemed inevitable in the repair processes of wounds. Thus it came to pass that the animal ligature was discarded and forgotten.

LORD LISTER

Based on the monumental labors of Lord Lister, surgery has been brought to its present perfection by a contribution of scientific workers. We all point with pride equal to that of Paré and sometimes wonder what may be left to our successors for contribution of equal value. Lord Lister attained the end sought, but by means which now seem in large measure superfluous. He made and maintained a wound in an aseptic state, and in very large degree taught us the reason why. He was slow to discard the use of drainage, which seemed to him essential, and for a long period his sutures, although of catgut, were interrupted, taken through and through the parts to be united, but always to include the skin.

When I was his pupil in 1870 he pointed out to us—an observation which I am sure was original with him—the active cell proliferation in the deeper layer of the skin. He often showed us that the imbedded suture at this point was frequently nearly divided, when the portion in the deeper part of the wound showed little if any change. He also called attention to the developing colony of bacteria which usually penetrated only the superficial layers of the skin, the stitch abscess. In this way he in a measure foreshadowed the later contributions of great value which demonstrated that bacteria of certain varieties were normally present in the layers of the skin, especially in the sweat ducts and hair follicles. Here they undoubtedly play an important physiologic rôle in the proliferation and destruction of the dying exfoliating cells—an instance of rare temerity on the part of Nature, who harnesses into her service a most potent enemy, which in other relations may cause death. Here the *Micrococcus pyogenes albus* plays a rôle of importance, yet as a possible active enemy, equaled only in danger by that of the *Bacillus coli communis* transposed from within its normal habitat in the intestine.

2. A Brief Sketch of One of Baltimore's Greatest Men, Horatio Gates Jameson, M.D.: His Most Valuable Contribution to Surgery: The Occlusion of Arteries by the Buried Animal Ligature. Henry O. Marcy, M.D., Trans. Southern Surgical and Gynecological Assn., 1906.

REASONS FOR NEGLECT OF ANIMAL SUTURES

When we recall the multiplied experiences of a very considerable number of America's most distinguished surgeons with the use of the animal ligature, and the frequent publications on the subject extending over a quarter of a century and incorporated into a number of prominent text-books on the surgery of the time, we are confronted with two important queries.

First, how could this method of the ligation of the arteries so soon have fallen into disuse?

Second, how was it possible that a subsequent generation could have been so absolutely ignorant of such a wide experience published and republished in both America and England?

The first question is easy to answer. Wound infection was the rule, and when infection occurred the selection of ligature material was a choice of evils. The silk ligature, with one end cut off and the other to serve as a drain, was generally adopted. To Lord Lister is undoubtedly due the honor of having reintroduced the animal ligature into surgical practice—on an entirely different basis, however, since he was the first to show that wound inflammations were caused by the introduction of something from without which acted as a ferment, and that that something consisted of very minute organisms of a low order, which reproduced and which were the cause of the so-called wound inflammations. This having been made clear and the demonstration ample that necrosed tissues in subcutaneous wounds were absorbed, it followed as a sequence that animal tissues applied about an artery in the form of a ligature might also be carefully disposed of by absorption, and hence we find, under a new stimulus and with a new reason, Lord Lister paralleled the experimental studies of Dr. Jameson, of which he was ignorant.

LISTER'S EARLY TEACHINGS

Early in 1870 I had the good fortune to become the first American pupil in Edinburgh of Mr. Lister, afterward Lord Lister. He was then comparatively unknown. I sought to profit by the instruction of the famous Professor Syme and thus learned that Mr. Lister had married the daughter of Professor Syme. This distinguished man died during my residence in Edinburgh. I was warned not to make the acquaintance of Mr. Lister, since he was considered an enthusiastic believer in a surgical heresy. Men who should have been his best supporters in the university would not recognize him.

I thought I knew surgery. I had had a large experience as a surgeon and medical director in the Civil War. For some years I had been a postgraduate student and instructor in Harvard Medical College. For the previous year I had been a student in Berlin under the celebrated professors Virchow, Martin and Lagenbeck. Here was a comparatively young, obscure Scotchman, who demonstrated to me daily that severe wounds might be made with impunity in almost any part of the body, and compound fractures recover without inflammation with the same safety as simple ones. I shall never forget my first morning with Mr. Lister in the old Edinburgh infirmary, where he showed me three resections of the elbow joint in children, in which the repair processes were going on without edema, pain or fever. Arteries were ligated with seeming impunity, and even the knee joint, hitherto the dread of all surgeons, was opened with safety. Fortunately my knowledge of surgery was sufficient to teach me the value of these new demonstrations, and with notebook in hand I followed the master with daily increasing admiration and profit.

It is true that we now look on many of Mr. Lister's early procedures as cumbersome and unnecessary. Results, however, furnish the criterion of success. In these he was not wanting. The carbolic acid incorporated in the lac-plaster as a wound dressing was soon discarded. The carbolic spray, for good reason, was discontinued. The spray came near being the ruin of Mr. Lister's reputation and wrecking of the whole system of antiseptic surgery. This was made the most of by Mr. Lister's personal opponents, who would see in it the only contribution that Mr. Lister had attempted to make to surgery, purposely ignoring the scientific principles on which he sought to base the new teaching and that the spray was simply recognized as a means to the end of preventing infection during the operation.

"Away with the spray," said his rivals in London, who looked on his advent there only with a jealous eye. "Fort mit dem Spray," reëchoed his German adversaries, who at the time accepted grudgingly any contribution from France or England. American critics took up the refrain, and the new teaching can hardly be said to have been established in a general way until after the International Medical Congress in London in 1881. Here was fought the battle royal, an occasion which those of us who participated will never forget.

Drainage and abundant absorbable dressings lasted longer and are still in use by some surgeons, even in aseptic wounds. They may be accepted as a *sine qua non* in infected wounds. One reason why Mr. Lister for so long a period insisted on drainage and absorbable dressings was his fear that the serous effusion was too abundant to be absorbed or become vitalized. A second and perhaps equally important reason was that he closed his wounds by interrupted sutures and looked on the possibility of an infection traversing the line of the suture. It does not appear to have occurred to him at this early period that sutures could safely be buried even in well-vitalized structures.

AUTHOR'S EARLY USE OF BURIED ANIMAL SUTURES

On Feb. 19, 1871, in consultation with Dr. A. P. Clarke of Cambridge, I operated on a patient, Mrs. M., aged 50, who had suffered for years from hernia. Five days previous she was seized with severe pain in the inguinal region, accompanied by vomiting. Long continued and careful taxis had failed to reduce the hernia, and for twenty-four hours the vomiting had been stercoraceous, and the patient seemed *in extremis*. The hernia tumor was the size of an egg, protruding from the external inguinal ring. A careful dissection exposed the sac, which was closely adherent to the surrounding parts. The constriction was at the internal ring and was divided with some difficulty. The hernial contents were reduced, and the sac, unopened, was returned within the ring. Two stitches of medium-sized catgut were taken directly through the deeper structures about the ring. The wound was dressed antiseptically, and from Dr. Clark's notes, taken at the time, I find that the patient steadily progressed without pain or accident and was convalescent in three weeks. The result was a radical cure of the hernia, although the canal was not closed for this purpose. The opening into the abdomen was so large that we feared the escape of the contents, especially as the patient was afflicted with a severe chronic bronchitis. I only expected the

sutures to hold the parts *in situ* temporarily. Mrs. M. died six years after the operation, and was troubled with the cough during the entire period, but the canal remained firmly closed at her death. She did not wear a truss after the operation.

On March 10, 1871, assisted by Dr. W. W. Wellington of Cambridge, I operated on Mrs. L., aged 45, suffering with strangulated hernia, usually retained by a truss. It was on the left side and direct inguinal in variety. The sac was returned unopened; the canal was closed by three large sized catgut sutures, taken deeply through the pillars of the ring, and the wound carefully dressed antiseptically with Lister's carbolized lac-plaster. When examined the following June, the cicatrix was linear, and a firm deposit of new tissue could be felt, marking the site of the buried sutures. I reported these cases at the meeting of the County Medical Society, Oct. 11, 1871, and published[7] a paper discussing the subject, Nov. 16, 1871. In closing I remarked:

> As far as my observation has extended, this is a new use of the carbolized catgut ligature and suggests a still wider field of application. No method of operation for the radical cure of hernia appears more feasible, is probably attended with less danger, and at the same time affords a means of closing and strengthening the weakened ring, which is so desirable, and yet, with all the ingenious devices of surgery, is so difficult to obtain.

Although I continued to operate from time to time, as occasion demanded, in cases of strangulated hernia, and in every case closed the ring with buried animal sutures, it was not until Feb. 4, 1878, that I deliberately attempted the radical cure of a reducible hernia. This patient I had some time previously (Dec. 2, 1877) cured of a large, old irreducible omental hernia of the right side, which had become complicated by the descent of a strangulated loop of intestine. In this instance I dissected the sac and carefully closed the ring and structures of the abdominal wall. A truss retained imperfectly a large direct inguinal hernia on the left side, for which Mrs. W. besought cure, although she was 70 years of age. In the operation I was assisted by Dr. A. L. Norris of Cambridge, who cheerfully gave his approval. In this I was the more fortunate, since until that time my advocacy of operative measures for the cure of hernia in non-strangulated cases had been considered unjustifiable.

The above described experiences paved the way for my application of buried sutures in a great variety of wounds. They were, however, based on a long series of experimental studies in animals, in which I was ably assisted by the late surgeon general, Dr. A. P. Holt, and my laboratory assistant, Dr. S. N. Nelson. These researches were from time to time published in extenso.[8] It was clearly demonstrated that the catgut was first surrounded by leucocytes, invaded by them, and that, *pari passu,* new connective tissue cells in large degree replaced the suture material, leaving a living band of well vitalized structure, which in a measure reinforced the coapted parts. Later these demonstrations and deductions were amply verified by the splendid research work of Ballance and Edwards.

7. A New Use of Carbolized Catgut Sutures, Boston Med. and Surg. Jour., viii, 316.

8. Radical Cure of Hernia by the Antiseptic Use of the Carbolized Catgut Ligature, Tr. A. M. A., 1878, p. 295; Animal Ligatures. Ann. Anat. and Surg., 1881, 252; The Animal Ligature. New England Med. Month., June 15, 1883, 387; Surgical Advantages of the Buried Animal Suture, THE JOURNAL A. M. A., July 21, 1888, xi, 71; The Animal Suture; Its Place in Surgery, Am. Assn. Obst. and Gynec., 1889.

INFECTION FROM CATGUT SUTURE

Up to this time I had been singularly fortunate in not having a single case of wound infection traceable to the catgut suture material. I had personally prepared it after the formula advised by Mr. Lister.

In the pressure of a large general hospital practice my supply of catgut gave out. I obtained catgut from a reputable English house and at once had a series of wound infections of a most serious character. In three major operations, one patient died from infection and the others made a slow and imperfect recovery. Bacteriologic study showed that this catgut contained staphylococci. The fruitage of this unfortunate experience caused me to determine that catgut was in itself naturally defective as a suture material and not easy of sterilization. I found that the catgut of commerce was manufactured, briefly, as follows:

The small intestine of the sheep is permitted to undergo a process of decomposition until the more resisting connective tissue sheath can be separated as a firm, white fibrous cylinder, not unlike the sausage-skin of the butcher. This connective tissue sheath is necessarily infected by bacteria in considerable variety. It is split longitudinally into different widths, stretched, twisted and dried.

The violin-string of commerce, as every one knows, in its dry state is remarkably strong; and yet there is a yielding of its fiber sufficient to demand repeated increased tension, or tuning, in order to secure the requisite musical tone. A study of the histologic elements of the connective tissue sheath of the intestine in animals makes it perfectly apparent why catgut necessarily falls far short of the ideal material for sutures. The ultimate fibers are disposed in oblique rather than parallel lines, obviously to permit the easy distension of the viscus. Otherwise the intestinal canal could not easily accomodate itself to its contents. The longitudinal splitting of the sheath of the intestine necessarily cuts these fibers at an angle, leaving a resulting product not unlike that produced by the dividing of a very delicate silk gauze on the bias. Any attempt to twist an oblique section of silk gauze into a cord results in a weak and most unsatisfactory product. The difference between the twisted silk fabric and the twisted catgut lies in the fact that the cement substance, collagen, holds the connective tissue fibers in a much closer union. This, however, is subject to an easy absorption of water and gives in the undried ribbon of the intestinal sheath a soft, flat, slippery, elastic product unsuited to any constriction purposes. Immerse catgut for a short period in any watery solution and note its changes. It first becomes swollen, and this is the reason why the catgut suture is threaded through the needle with difficulty. After a long immersion it can be untwisted, leaving as result the more or less softened, flattened band. This is why the knot of a catgut ligature is untrustworthy. The fault is inherent in the material, not in the surgeon. As a crucial experiment, select a beautiful coil of catgut, use it as a fish-line and note the results. Then remember that the buried suture material is immersed in the fluids of the body and must of necessity undergo a process of maceration.

The experience of these many years has shown that although catgut can unquestionably be sterilized, the process is by no means an easy or satisfactory one. The cement substances holding the connective tissue fibers

is necessarily damaged, first in the process of separation of the connective-tissue sheath from the other components of the intestine. This is still further damaged, as well as the fibers themselves, by nearly every process in use for sterilization. Influenced by these studies, I at once instituted an active search for better suture material. I then for the first time discovered the remarkable facts already narrated at some length, and found, to my astonishment, that for a generation animal ligatures, introduced by Dr. Physick, had been extensively used in America, all of which experience had been forgotten and lost. Of the very considerable variety of material used for ligatures it was clearly apparent that the tendons of animals were anatomically the best, since the fibers were parallel and they could be prepared with less injury to the cement substance in the ligation of arteries and had been used for the ligation of the pedicle of ovarian tumors by Dr. Bellenger of South Carolina in 1830 and later by Dr. Eve of Nashville, Tenn.

SEARCH FOR SUITABLE SUTURE MATERIAL

I found nothing suitable in the tissues of domestic animals; although a comparatively good ligature material was obtained from the tendons of the ox, it was rare to find fibers fitted for sutures. I knew that the Indian women of the northwest used tendons in place of thread for the sewing of their skins.

In the tents of the Dakotas I found willing teachers. The fascia lata of the buffalo was used for suture material, and this failing, that taken from the moose. From this source I obtained a fairly satisfactory product. The hind leg of the moose also furnished a fairly good material. The tendons from the crane and ostrich are of ample length. I obtained tendons from the tail of the whale four feet long, and large and strong enough to serve as ropes.

The peculiarity, however, of all these tendons is that the fibers interlace, an extremely wise provision for Nature's use, but not suited to the manufacture of fine thread. Dr. Simmons of South Carolina sent me tendons from the tail of the fox squirrel; and, for the first time, I learned that in this animal the disposition of the psoas muscle is different from that of any other animal I had then examined, in that each fasciculus of the muscle has its own separate tendon extending to the very extremity of the tail. In the squirrel they are extremely beautiful, not much larger than coarse hairs, but only six or seven inches long. My desire now was for larger squirrels. My late friend, Dr. Hunter McGuire of Richmond, furnished me the opossum for dissection. Here I found the same anatomical distribution as in the squirrel, but the tendons were still too short to serve for most suture material, although beautifully fine and even. The books on comparative anatomy were singularly oblivious on the peculiar anatomic distribution of the tendinous structures of the tails of animals, but at last I thought that I had found the key: Since the opossum was a marsupial, it was extremely probable that the construction of the tails of this entire group would be similar

At this time I had under care a retired Australian merchant, from whom I sought instruction. His playful reply was that he knew that the tails of these animals made excellent soup, but as a personal favor he would have the subject investigated and have a report made me. In due time the answer came in a considerable bundle of tendons from the tail of the wallaby, a species of small kangaroo. The problem at last seemed settled, and I have never since received finer specimens.

There is a considerable difference in the number, but each tail contains usually from twenty to thirty tendons. The smaller varieties of the animal furnish tendons in sizes of considerable variety, and but few of them too large for use. The anatomic disposition remains the same in the larger species, and specimens from these animals are not seldom three feet in length and strong enough to draw a carriage. Although there are few interlacing fibers in these tendons, and although when split with care they furnish much excellent suture material, they are never quite so even, sound, smooth or strong as whole tendons.

Their method of preservation is of importance. The tendons must be taken from freshly killed animals, kept straight, quickly dried and kept dry in shipment. As most surgeons know, the ultimate fibers of a tendon are parallel, overspacing each other in a uniform manner, are held together by a cement substance and constitute some of the strongest structures of the body. Carefully selected tendon sutures of equal weight are stronger than silver wire. Such strength, however, is of minor consideration, since great tension on sutures is seldom required.

PRESERVATION OF TENDON SUTURES

The processes of preparation of tendon sutures are not difficult. Good tendon is comparatively aseptic. The tendons are soaked in a one to a thousand corrosive sublimate solution until soft. They are then easily cleaned and separated and dried straight on wet, sterile towels. The further preparation consists in immersion in a weak solution of formaldehyd, about one part to two hundred of sterile water. They are then chromicized in the usual manner and dried. The tendons are then permanently put up in boiled linseed oil, to which has been added one-twentieth part of carbolic acid crystals.

It will be noted that this is not an important departure from the method first recommended by Mr. Lister. I have tried nearly every method advocated from time to time, besides many experimental studies of my own, but nothing has proved so satisfactory. When preserved in alcohol, after a time tendon and catgut become brittle. When kept dry the material depreciates in value and after a time becomes untrustworthy; on the contrary, preserved in the carbolized oil, I think the suture material is rather better after some months. I now have specimens of catgut prepared over thirty years ago which are satisfactory and trustworthy.

In regard to the preparation of catgut there is still much discussion, owing, as I think, in large degree to the inherent defects already referred to.

In order to prevent the putrefactive changes in the separation of the connective-tissue sheath of the intestine, the intestine from freshly killed animals has been utilized. The fibrous coat is separated in a comparatively aseptic state. This, of course, when properly done, is of great advantage. The sterilization is also effected before the twisting process takes place. Various antiseptics have been used to be incorporated in the sheath before the twisting, the most valuable of which are the silver salts, especially the iodid, and pyoktanin. It is asserted by the advocates of these processes that there is a manifest advantage from the incorporation of these antiseptics into the suture material to last

during the entire period of their usefulness within the tissues. There can be no doubt that these chemicals exercise a marked inhibitory power on the reproduction of bacteria, but it is safe to assume, without argument, that if no bacteria have been introduced into the wound, either by the suture material or by manipulative processes, there are no bacteria to inhibit, and therefore the use of these chemicals in such wounds is of very doubtful value. On the other hand, I do not believe, judging from my own experience, that they are particularly deleterious agents. Chemicals of any sort introduced into wounds can not of themselves be considered advantageous; yet most surgeons irrigate wounds with the sublimate solutions freely and for years it has been my daily habit to soak my tendon sutures in a warm, one to a thousand bichlorid of mercury solution, for a half hour before using. I have thought this advantageous in freeing the tendons from oil, which in a warm solution soon floats on top, while the softening of the sutures causes them to be more supple, and therefore more easy of application.

SUBCUTANEOUS SUTURES

The history of subcutaneous suturing is less satisfactory. It is now well known that the hair follicles and sweat ducts are the abiding places of bacteria and that the superficial epithelial layers of the cuticle are in a way freed for easy desquamation by the ever-present countless numbers of the *Micrococcus pyogenes albus*. Any of these bacteria drawn into the wound by improper suturing are favorably planted for colonization. The surgeon may very safely suture the deeper structures of an aseptic wound, accurately coapting like tissues. This should, of course, be done by continuous sewing and it must be remembered that undue constriction is to be avoided. One of the important maxims ever to be kept in mind, however, is coaptation and not constriction.

Subcutaneous suturing is more difficult. In the first place, the suture should be sufficiently fine and not chromicized, that its absorption may be assured before the normal process of skin growth brings it to the surface. The suture material itself is not exposed to invading bacteria. The stitches must penetrate only the very deeper layer of skin and must be taken from side to side so that each stitch enters exactly opposite the emergence of the preceding one. In this way by gentle traction the skin edges are brought into even coaptation, the last suture is fixed with a half knot and the needle emerges at some distance from the end of the incision. The wound is carefully dried and sealed with iodoform collodion. The ends of the suture are drawn on, cut short and allowed to retract beneath the skin. The iodoform has a distinct inhibitive power on the development of bacteria of the skin. In this way, wound treatment is reduced to its lowest terms of simplicity and safety. No drainage should ever be permitted in aseptic wounds in healthy structures. To this rule even the amputation of the thigh is no exception. An aseptic wound thus made and sealed must remain aseptic, and primary union will follow.

DISADVANTAGES OF METALLIC SUTURES

I have referred to the early use of wire which was reintroduced to the profession by Drs. Sims, Emmet and others. The work of Dr. Sims in establishing the cure of vesicovaginal fistula will ever remain a monumental contribution to surgery. I do not think that I have ever seen a more dextrous operator. He may justly be accredited as the founder of gynesic surgery. He attributed a large degree of his success in plastic surgery to the use of silver wire interrupted sutures. Following the teaching of this distinguished author metallic sutures soon became popular. Their superiority over linen or silk in septic wounds, then the rule, is self-evident. Metallic sutures may be buried and remain indefinitely in the tissues. As a rule, however, they are necessarily a source of irritation, being foreign bodies, and sooner or later must be removed.

PROPERTIES OF SILK SUTURES

Silk or linen suture material is easily made aseptic or antiseptic by heat, impregnation with iodid of silver, pyoktanin, etc. During the indefinite past, the instruction had been to wax well the ligature. The beeswax incorporated into the fiber rendered it not only smooth and less irritating, but, as we now know, lessened the liability of the ligature to become filled with bacteria. One of Mr. Lister's early experiments was the immersion of the silk in a hot bath of melted beeswax to which 10 per cent. of carbolic acid had been added. The superfluous wax was removed by repeated drawing of the suture material through a fold of cloth.

Silk as a buried suture has the advantage of being easily sterilized, and its strength permits the use of very fine thread, it being important to minimize the amount of unabsorbable material buried in the tissues. Silk in itself is an animal product and may be absorbed, but the absorption is such a decided exception that silk may be classed as an unabsorbable material. The evidence is so conclusive as not to admit of argument that silk ligatures, even when small, interrupted and cut close to the knot, are a frequent source of discomfort and suffering.

I have in my possession three loops of silk ligature with the following exceptional history: About three months prior to my operation the patient had had the ovaries and tubes removed by one of the leading New York surgeons. Primary union followed and she was discharged convalescent four weeks later. After a time she was seized with the most frightful torture from vesical irritation. There was an almost constant desire to urinate, never followed by relief. She had been kept almost constantly under the influence of morphin, although still in a state of extreme suffering. Under ether I dilated the urethra and removed three calculi the size of small cherries. Two were free in the bladder, but a third was still attached to the posterior wall of the bladder by a portion of the ligature. Each contained as the nucleus the interrupted silk suture unchanged, with the knot still remaining firm.

ADVANTAGES OF TENDON SUTURES

Although there are surgeons who still use silk as a buried suture, the number is far less than formerly. One of the more prominent New York hospital surgeons told me only recently that nearly all the New York surgeons used kangaroo tendon sutures almost exclusively.

METHOD OF SUTURING

If absorbable sutures are to be used, how may they best be applied? Coaptation and fixation, at rest, of like structures with as little force applied as possible, is the object sought. More suture material than is required for these purposes is detrimental. The suture must be applied with a minimum of devitalization of the tissues which are coapted. The interrupted suture

is faulty in that it holds at only the single point of application; and in order to make complete coaptation in large wounds, undue compression, often to the devitalization of the part constricted, must be used. Each stitch necessitates a knot.

The interrupted suture is the legacy of the fathers, and used by them distinctly with the purpose of removal. In order to relieve the tension of the exudation of fluids, a stitch was cut from time to time as thought desirable.

If the wound remains aseptic, primary union will supervene, and the stitches taken through the skin for the purpose of removal have no advantage in being single. Thus taken, the interrupted stitches coaptate far less evenly and securely the included tissues, and require much more time to apply them than do continuous stitches. If the seamstress or the tailor made our clothes in this manner, we should wonder at their bungling methods. The principle is precisely the same with the surgeon; and, even if he has to serve an apprenticeship to the tailor, he should certainly not be less dextrous, since Nature's most precious coat should be most artistically repaired.

Like structures, as far as possible, should be coapted; fascia to fascia, muscle to muscle. Fine continuous running sutures, taken rapidly, accomplish this purpose in a manner so as not to leave pockets for the accumulation of fluids. The accumulations as well as larger tendons applied in many layers, we know, if aseptic, will usually be cared for by Nature's processes, but it is a part of our art to minimize the burden, instead of making the effort to determine how much she can accomplish in this direction. The over-and-over suture, glovers' stitch, is undoubtedly the one in more common use, but it does not serve the purpose in the coaptation of wound structures nearly as well as the parallel stitch, in which the needle is inserted deep within the tissues parallel to the long axis of the wound, and each succeeding stitch is made by introducing the needle exactly opposite the emergence of the preceding one. In this way, on tension, coaptation is evenly secured, and the suture material crosses the incision at right angles and by this means the suture is completely buried in healthy, closely coaptated structures. Sometimes, for example, in the reconstruction of the inguinal canal, the closure of the peritoneum and the fascia, there is a decided advantage in sewing a double line of sutures, just as the shoemaker sews leather, the needle with eye near the point serving as a shuttle to carry the suture. It must, however, be remembered that much force is inadvisable, since coaptation, and not constriction, is the purpose.

In sewing, the needle is of importance as well as the suture, and the profession is greatly indebted to Hagadorn for his valuable addition to our armamentarium in this direction. The medium sizes of fully curved needles serve best, since they can usually be used by the fingers without the aid of forceps.

The continuous suture requires but a single knot, and is less liable to cause undue constriction than the interrupted suture, since a compensation occurs, equalizing the force applied to the entire suture. This I consider of the first importance, since under the influence of earlier teaching, most surgeons still use too much force. Injury and devitalization of the tissues is the consequence. The extraordinary strength of tendon is in a measure a fault, since its unyielding character admits easily of undue force.

The frequent inquiry is made for larger tendon, "since I must have it very strong." Some time ago one of Europe's most distinguished surgeons operated in my clinic. He would have only braided silk, and in its application broke all his sutures finer than No. 8. Such force must necessarily cause necrosis of all the enclosed structures.

All aseptic wounds closed with buried aseptic tendon sutures will remain aseptic and in well vitalized structures will be followed by primary union. There is no danger of subsequent infection, no expensive and troublesome dressings are required; the anxious forebodings of the surgeon "lest something go wrong with his wound" is avoided; no sutures are to be removed, relieving greatly the dread and anxiety of the patient; safety is greatly enhanced and the period of convalescence is shortened. When the work has been done with care the resultant cicatrix is scarcely visible, a matter of much importance in some portions of the body. Operations hitherto impossible have been rendered feasible by the use of buried absorbable sutures; for example, the reconstruction of the pelvic structures, the closing of rents in the peritoneum, etc. The reconstruction of the obliquity of the inguinal canal for the cure of hernia in the male has become an almost everyday occurrence. It was for this very purpose that I first used the buried animal suture in 1870, and am now in my five hundredth series of cases with over 90 per cent. of resultant cures. My operation under various names is now practiced in every part of the civilized world, for the cure of the female vesicovaginal and rectovaginal fistula. The reformed structures may be greatly strengthened by the rejoining of the sundered tissues by means of lines of buried sutures, as contrasted with a single layer of interrupted sutures, for example, the closure of the abdominal wall in laparotomy. Here, in the closure of the wound by a single line of interrupted sutures, about 10 per cent. of the cases result in hernia at the line of the incision. Not seldom an abdominal bandage is ordered to be worn for a year. This I consider worse than useless. When closed in layers, the composite structures are rejoined, and in primary union hernia should be altogether avoided. In over two thousand laparotomies of this character I have had but a single subsequent hernia. Indeed, this is but to be expected, since like structures are joined, and the suture itself is replaced by a living band of connective tissue. To-day the aim of the surgeon is to reconstruct and restore, as far as possible, to the normal pattern, all the healthy tissues remaining for manipulation. To this end a tumor is removed, and the parts completely closed, if possible. Although our mission is necessarily iconoclastic, the service should be rendered with such gentleness of measures that Nature accepts it as her best ally, and a double blessing follows the ministration of the surgeon, not alone in the averting of the threatened danger, but also in the accomplishment of the same with the minimum of pain and suffering, and the maximum of safety. I consider the buried animal suture my best contribution to surgery.

With all the emphasis of an earnest conviction, I commend to every aseptic surgeon familiarization with the methods of wound closure by means of buried absorbable sutures, preferably tendon, and predict not only that they will receive early general adoption, but that, in importance, they will hold the first place in the technic of modern aseptic wound treatment.

180 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. HARVEY P. JACK, Canisteo, N. Y.: Kocher, in his latest work, expresses wonder that so many of us continue to use absorbable sutures; he reports 100 cases of aseptic breaking-down of wounds. Catgut, chromicized or formalized, has been the only suture material that I have used since I began the practice of surgery. I will report one more case of aseptic breaking-down of the wound somewhat in detail, that you may be able to give some solution of the cause of breaking-down. The case was one of hysteromyomectomy; the time consumed was only thirty-five to forty-five minutes, and the wound was closed in layers by means of No. 2 chromic catgut, made by one of the best manufacturing houses in the United States. The patient did well for two weeks with normal temperature; then I was summoned to the hospital by the statement that the patient had vomited up her intestines. The wound had broken open and a large part of the small intestines was lying on the abdominal wall. I introduced three layers of sutures, using catgut for the buried sutures and re-enforcing that with silkworm gut. The woman made a perfect recovery and left the hospital three weeks from the time of entrance. The patient was pronouncedly gouty. Whether that had anything to do with the rupture of the catgut I do not know. She was also a neurasthenic, although she had been carefully prepared for the operation and re-enforced in every way. It was, however, with much difficulty that she was properly nourished. But the catgut in the wound was absorbed almost entirely at the end of two weeks. Since that experience I have closed the peritoneum with silk. The suture material was thirty-day catgut.

DR. D. TOD GILLIAM, Columbus: For a good many years I have used absorbable sutures in my abdominal work, and up to six months ago I have used the method of closing the abdominal wound by overlapping the fascia as we do in the hernial cases. I used the chromicized gut and found that I was having a great many cases in which the wound would open—not down to the abdominal cavity, but the outer layers would open. There was no suppuration, but a secretion of serum, and it was due undoubtedly to the irritation of the unabsorbed catgut. I am sorry to say that by reason of this I have been obliged to come back to the old method of the silkworm suture, using the method known as the "figure-of-eight suture." It is not satisfactory to me in all respects, but I have had so much evil result from the chromicized gut that I have been obliged to return to this antique method.

DR. A. ERNEST GALLANT, New York: My experience shows that difficulty in the abdominal wound has often been due to my having tied a double knot in the suture material. While absorption of the suture takes place the knot remains as an irritant because of its consistency.

DR. HENRY O. MARCY, Boston: One who will carefully read the paper *in extenso* will find that the criticisms made and many others have been answered. In the case in which the No. 2 thirty-day catgut was used and the tissues broke down, I think that there was something wrong with the repair process and not with the catgut. You all know that two weeks will give carefully coapted structures time to unite. It is a good plan, with a long abdominal wall, to restrain muscular action. I put on a strip or two of adhesive plaster to hold the abdominal wall at rest. Well-selected kangaroo tendon will hold much longer than catgut. It is an important matter to have few knots and to put coapted structures at rest without there being any undue constriction—in other words, to immobilize the wound.

The Economic Cost of Tuberculosis.—The total cost in the United States exceeds $1,100,000,000 per annum. Of this cost about two-fifths, or over $440,000,000 per annum, falls on others than the consumptive. An effort to reduce the mortality by one-fourth would be worth, if necessary, an investment of $5,500,000,000. The erection of isolation hospitals for incurables is probably the most profitable method at present of reducing the cost of tuberculosis.—Prof. Irving Fisher.

Clinical Notes

DIPHTHERITIC CONJUNCTIVITIS

MARIANA BERTOLA, M.D.
Attending Physician to Mills College
SAN FRANCISCO

This paper is not written from the standpoint of the specialist but from that of the general practitioner. It does not present anything new for consideration, but it calls attention to a condition which is more frequent than is commonly supposed.

FREQUENCY

Jacobi of New York says that about the year 1850 diphtheritic conjunctivitis was frequent and destructive. DeSchweinitz declared it rare in America and England and very prevalent in France and Germany. Since that period the number of cases reported has been less. In pre-antitoxin days Graefe reported three cases and three deaths; Gilbert, four; Widimark, one.

In 1904 Kooken reported eighty-one cases of diphtheria, in forty-seven of which diphtheritic conjunctivitis was present. In 1904 Juler also reported one case. In 1906-7 Bruns, having a splendid opportunity in the south, reported thirty-six cases. The *British Medical Journal*, the *Lancet*, and THE JOURNAL report no cases for 1906.

McCollom declares that the conjunctiva is rarely attacked by the Klebs-Loeffler bacillus. Of our local men, Dr. A. Barkan reports a small number of cases secondary to nasal diphtheria, also a number of cases of pseudo-diphtheritic conjunctivitis. Dr. W. B. Lewitt reports one "in which there was a distinct membrane at the inner angle of the eyes."

CLASS: PRIMARY OR SECONDARY

The majority of the few cases reported have been secondary, and most commonly secondary to nasal diphtheria.

Stephenson makes note of a number of cases secondary to "bronchial diphtheria," and to "running ears." Barkan writes of a number of "pseudodiphtheritic" cases "in the wake of blennorrhea in the adult and in the new-born.

Lewitt's case "was in connection with a most malignant case in which the larynx, pharynx and nasal cavities were involved. In the mouth the membrane covered a portion of the hard palate."

The secondary cases are from autoinoculation from discharges from other infected areas.

In the *Lancet* of Jan. 4, 1908, Slater reports a case of a girl who was treated for some eye inflammation; a week or two later several white patches were found on the vulva and spread elsewhere on the skin. Antisyphilitic treatment was tried for two years. Then after inoculation of agar and blood serum tubes and experiments on guinea-pigs, the Klebs-Loeffler bacillus was found. Diphtheria antitoxin was given and immediate improvement followed. Slater believes that the patient's eyes were the primary seat of infection.

Primary cases in attendants on patients in tonsillar cases have been reported, the discharge having been coughed by the patient into the eyes of the attendant.

SYMPTOMS

The period of incubation is from twenty-four hours to four days. McCollom says that diphtheria differs from

other infectious diseases, as the process of infection is similar to that of a dissecting wound. The organism finds access through an abrasion of the mucous membrane as an infection is produced from the prick of a needle at autopsy or a scratch during dissection.

The eyelids may have been red and inflamed for a few days or a few weeks. They become swollen and very painful. The child cries at every attempt to open his eyes. A membrane, gray or whitish-gray, like that found on the diphtheritic tonsils, forms on the conjunctiva. It may be delicate and thin, thick and strong, or in small patches, according to the severity of the disease. It may or may not extend to the cornea. Iris prolapsis, severe ulceration of the cornea and loss of sight may result. The removal of the membrane leaves a granular bleeding surface. The formation of the membrane may be attended by a seropurulent discharge which may contain the Klebs-Loeffler bacillus, accompanied by the *Bacillus xerosis,* the *Streptococcus pyogenes,* and the *Staphylococcus.* The lids may be glued together and much swollen.

The constitutional disturbance is as great as in other forms of diphtheria. The toxin generated in twenty-four hours is sufficient to produce death in severe cases. The effect on the heart must be constantly borne in mind. Systolic murmurs are frequent. The pulse is of peculiar soft character and if very rapid demands immediate attention; if very slow it predicts fatal results.

The glands of the neck may or may not be enlarged. Sterling writes of one case with a severe adenitis. Stephenson speaks particularly of the preauricular glands being involved. Italian and French writers report cases of diphtheritic conjunctivitis having no membrane, but a granular bleeding surface containing the Klebs-Loeffler bacillus, and yielding to antitoxin.

Diagnosis is easy with the aid of the microscope. The diphtheria bacillus can be distinguished from the pseudo-diphtheria bacillus by its losing its gentian violet more quickly when in alcohol than does the pseudo-diphtheria bacillus. The true diphtheria bacillus gives an acid reaction in neutral bouillon, and the xerosis never does. The injection of diphtheria suspension into guinea-pigs causes constitutional disturbance, while the pseudo-diphtheria causes a swelling only at the point of puncture.

TREATMENT

Before antitoxin days silver solutions, peroxid of hydrogen, borax, boracic acid and camphor washes were used, with great mortality. Recovery, if this took place, required from eighteen to twenty-four days.

Since the administration of antitoxin fatalities have dropped from 60 per cent. to 3 per cent. As in other classes of diphtheria invasion, the earlier the administration of antitoxin the better. Some foreign ophthalmologists deny that early injection of antitoxin prevents corneal invasion. Most Americans agree with them; Bull does not.

Dr. Lewitt advocates large doses of antitoxin, with no local treatment. Dr. Barkan recommends, in the treatment of true diphtheria, the injection of antitoxin; in the pseudo-diphtheria the use of silver salts; when the cornea becomes implicated, pilocarpin rather than atropin on account of the tension-decreasing properties of the first. Pilocarpin is used by some practitioners as an antipyretic, but it is denounced by others for its debilitating effects. Antitoxin renders the use of antipyretics unnecessary.

The following report of two cases may be of some interest:

CASE 1.—*Patient.*—Y. Z., aged 1 year, was seen by me for the first time three hours before he died. He had been attended by a physician for seven days and had been treated for bronchitis.

Examination.—The child lay in a stupor, clammy to the touch, with eyelids much swollen, as large as walnuts; protruding just below the rim was a fringe of thick grayish-white exudate. The breathing was halting and slow. The pulse was slow and irregular. When the child's mouth was forced open, the tonsils, soft palate, and part of the hard palate were seen to be covered with membrane. The eyelids were fastened together. When they were forced apart, a thick gray membrane was seen to cover the conjunctiva of the entire eye. A portion of this membrane was removed and sent to Dr. Webster for microscopic examination.

History and Clinical Course.—The serious condition of the child was explained to the parents, who had believed that the child had a "severe cold in its eyes and in its chest." The following information was drawn from the mother: The child had been taken, about two weeks before, to see a neighbor whose child had a "cold in the eyes." A short time after, the child was feverish, cried, and refused its bottle; its eyes became sore and swollen. It cried whenever its eyes were touched. It grew constantly worse until death. Dr. Webster reported the membrane as diphtheritic.

The infection of this child's eyes must have been secondary to the tonsillar diphtheria. A question remains unanswered: Did this child's throat become infected when he visited the child with the sore eyes?

CASE 2.—*Patient.*—A. B., 2 years old, was brought to my office. He had been suffering with a cold in the head for two days.

Examination.—The patient's nose discharged a thin watery fluid which irritated the skin wherever it touched. The discharge from his eyes was seropurulent. The eyelids were puffy and painful. When the eyelids were everted, small patches of gray membrane were seen on the conjunctiva. Examination of the tonsils and nose was negative. A specimen of membrane was sent to the laboratory for examination.

Treatment and Clinical Course.—Four thousand units of antitoxin were given the patient as soon as he could be put to bed. The next morning there was some improvement, but 4,000 units more were administered. In three days the patches of membrane had peeled off, and the nasal discharge had ceased. The laboratory report was that the membrane was diphtheritic. The child was kept in bed one week longer and completely recovered. This was undoubtedly a case of primary infection.

"Running ears," "sore eyes" and "discharging noses" may be considered by the laity as harmless ills, but there is no doubt that from these apparently harmless cases severe epidemics of diphtheria may result. It is also certain that this form of diphtheria is more prevalent than is supposed. Special supervision should be exercised in schools, and children displaying such symptoms be promptly sent home, with instruction to have the attention of their physicians. The medical profession should be on the alert to recognize the disease.

1050 Jackson Street.

Infant Feeding.—G. R. Pisek, in the *American Journal of Obstetrics and Diseases of Women and Children,* states that to be a successful infant feeder one should have a clear idea of (1) the general principles of animal nutrition; (2) the peculiarities of digestion in infants and young animals; (3) the food materials which may be used in feeding infants; (4) the methods of preparing foods; (5) the indications and contraindications for different kinds of food. With a working conception of these subjects, any physician may become a good infant feeder with practice.

RESECTION OF CECUM AND LOWER PORTION OF ILEUM

FOR FECAL FISTULA RESULTING FROM PERFORATION OF AN ACUTE GANGRENOUS APPENDIX

R. T. BOALS, M.D.
TILLAMOOK, ORE.

Patient.—C. R. J., a man, aged 46, weighing 240 pounds, had been ill for two weeks when I first saw him.

Examination.—The patient had a temperature of 103.2 F., cold clammy sweat, rapid feeble pulse, and complained of great pain in the lower abdomen and right side, where there was a large mass extending upward to the lower border of the ribs on the right side. By abdominal palpation I found extensive induration over McBurney's point extending one inch to the left of the median line. No pus had been passed by rectum. A diagnosis of acute perforative appendicitis with abscess was made.

First Operation.—I made an exploratory incision over McBurney's point, two inches in length, and going carefully through the peritoneum, found a large walled-off abscess, which ruptured as soon as I had opened into the peritoneum. Large quantities of pus and fecal matter of a very offensive odor gushed forth, which was carefully sponged away with dry sterile gauze. A great quantity of gas also escaped. Owing to the shock and the degree of infection I did not attempt to remove the appendix, so introduced tubular drainage, and placed one or two through sutures through the abdominal wall.

Postoperative History.—The patient rallied well from shock, but suffered much from an acute eczema caused by the irritation of fecal discharge, somewhat mitigated by the use of powdered zinc oxid and talc, equal parts. For the next month there was no improvement, so far as the fecal fistula was concerned. For almost two weeks rectal alimentation alone (peptonized milk and beef tea) was given.

Second Operation.—I opened through the old incision, dissected out the fistula, a long tedious operation—sponged the field of operation, kept it clean, found the head of the colon, but could not raise it, owing to dense adhesions and fear of infecting the general peritoneal cavity. The appendix, which was large and gangrenous, was adherent at the tip to the anterior mesenteric portion of the ileum about one-quarter of an inch from its juncture with cecum; the base had ulcerated and sloughed away, leaving a perforation in the colon. I broke up the adhesions, removed the appendix, freshened the perforation and closed it with a double layer of sutures, closed the abdominal incision with a few silkworm-gut sutures, and supplied drainage as usual.

Postoperative History.—The patient was kept on rectal diet for three days, after which slight nutriment by mouth was allowed. On the fourth dressing fecal matter poured out in considerable quantity. I waited four weeks more for some show of improvement. Meantime, the abdominal wound was irrigated four times daily with normal saline solution; and large pads of sterile gauze and absorbent cotton were place on the fistula, which was dressed several times a day with equal parts of zinc oxid and talc.

Third Operation.—I enlarged the original incision, dissecting away the edges of the fistula in the bowel, sewing through and through the site of the fistula and turning in with subperitoneal stitches.

Postoperative History.—Rectal alimentation was again resorted to for seventy-two hours. The wound was dressed as usual; on the third dressing fecal matter, as before, was present in abundance. Knowing now the uselessness of waiting, I fed my patient eggs, beef, etc., for four weeks, until his general condition had improved.

Fourth Operation.—I completely excised the diseased parts, with end-to-side anastomosis with Murphy's button. Thoroughly asepticizing the field of operation by irrigation with normal saline solution, I enlarged the original incision, removing all scar tissue, carefully dissecting down to the colon, broke up all of the adhesions, sponged the field of operation with dry gauze sponges, brought the head of the colon up into the incision, clamped off about three inches of the colon with an enterostomy clamp, divided the colon between two clamps; clamped off the ileum in same manner, covered the cut ends with wet hot sterile sponges wrung out of hot saline solution, clamped off and ligated the mesentery after the manner of Ochsner. I then closed all bleeding points, closed the proximal end of the colon by overhand suture of celluloid linen, invaginated it and closed with subperitoneal suture. One end of the Murphy button was introduced into the end of the ileum in the usual manner, and the other was introduced into the anterior surface of the colon about four inches above the point where it had been resected. The toilet of the peritoneum was carefully made, the abdomen closed by layers, and a small tubular drain introduced.

Subsequent History.—The patient was given a small quantity of warm water every hour until next morning; then he was given a small quantity of beef broth and other nourishment. The wound was dressed the second day and drainage removed; a very small fecal fistula resulted, which closed six weeks after operation, and patient at this date, three months after last operation, is following his usual vocation, that of a barber, and says that he never felt better in his life.

CONTINUOUS VICARIOUS MENSTRUATION FROM THE BREASTS

JAMES BROWN THORNTON, M.D.
BOSTON, MASS.

Apropos of the article by Dr. George Gellhorn,[1] St. Louis, a brief review of a most unusual condition of the apparatus of gestation appearing in the case of a young woman just dismissed from my care will, I am sure, prove interesting:

Patient.—Miss M. L., aged 32, a virgin, well-developed, with a wealth of magnificent black hair which, when uncoiled, reached to her feet, was brought to my office last summer by a near relative of the patient, with a history of progressive depression merging into melancholia, and a comparatively recent suspicion of suicidal tendency, which was the direct cause for alarm on the part of those interested in her.

History.—The patient came to this city from Canada about fourteen years ago. She had been a parlor maid until two years ago, when, because of a tragedy in the household in which she worked, the home was broken up. She first menstruated at the age of twelve or thirteen. The function was regular until stopped by a severe attack of measles about two years later. At the end of a year or so it was resumed, only to cease again within a few months, since which time the menses have never reappeared normally. In place of the usual menstrual activity there appeared a discharge of blood—sometimes a thin fluid mixed with blood—from both nipples, and from that day to the present, the patient has had constantly to keep in her corsage two tampons of absorbent cotton, one of which at least, the right, has had to be changed once each day.

An ocular demonstration of this remarkable phenomenon was given me in my office on more than one occasion. Thorough vaginal examination by Dr. Charles H. Hare and myself revealed a rudimentary, undeveloped or possibly atrophied condition of uterus and ovaries. Recent unwise conversation with well-meaning, but ignorant and superstitious individuals had brought about the mental state which led her friends to bring the young woman to me. Faithfully administered psychotherapeusis at my hands (without the assistance of our Boston Emmanuel movement, I might add, or other church instrumentality) over a period of some weeks brought about a complete restoration of the patient's well-being, and she is now, as she was before, one of the most optimistic and light-hearted of the young people in her set, but at last accounts the mammary glands were still giving a daily sanguineous discharge. The

1. Abnormal Secretion from the Mammary Glands in Non-Pregnant Women, THE JOURNAL A. M. A., Nov. 28, 1908, li, 1839.

question of marriage was brought up during the course of treatment, but circumstances seemed entirely to preclude such a possibility. My belief is that the results of such a step would be of value.

From a brief correspondence with Dr. George Gellhorn about the case I received the logical suggestion that the use of styptics combined with ovarian extract might lead the menstrual afflux of blood once more to the uterus, and if opportunity offers I shall certainly advise such a method in lieu of the seeming impossibility of marriage.

168 Huntington Avenue.

NOTES ON FAMILY GOITER

KARL SCHÄFFLE, M.D.
House Surgeon, Moses Taylor Hospital
SCRANTON, PA.

The following instance of transmission of goiter through four generations is of interest, especially in this country, where the endemic causes of goiter do not seem to be present:

Patient.—Pauline M., 18 years old, was admitted to the surgical service of the Moses Taylor Hospital on account of an enlargement of the thyroid gland which had been present about four years. During the last three months she had had considerable dyspnea and discomfort from the tumor. The right lobe and isthmus of the gland were removed, and on microscopic examination proved to be of typical parenchymatous structure. The patient made an uninterrupted recovery. The following notes show the course of this disease through the family.

Fourth Generation.—The patient, Pauline M., as above noted. A brother, aged 19, has a symmetrical swelling of the thyroid gland which causes considerable dyspnea. A sister, 16 years old, has a marked enlargement of the left side of the thyroid which does not cause any symptoms. There are four other brothers and two sisters, all below the age of puberty, and none shows thyroid enlargements.

Third Generation.—The patient's mother has a large, pendulous, goiter involving principally the right side. She has considerable dyspnea and discomfort. Her voice is harsh, her speech sibilant, and she has slight exopthalmos. I verified the above cases by personal examination. The pulse rates in all were normal and there were no signs of hyperthyroidism. In this generation the patient had five uncles and five aunts. Two of the aunts had large goiters, none of the uncles had this trouble.

Second Generation.—The patient's maternal grandmother, who was born in Berlin and came to this country in 1860, had a large goiter. The generations mentioned above were all born in America. In this generation there were two great-aunts who had goiter and two great-uncles and two other great-aunts who did not have goiter.

First Generation.—The patient's maternal great-grandmother, who lived in Berlin all her life, also had a large goiter. There is no knowledge of other members of this generation.

The patient's father came to this country from Stuttgart in 1873. There has never been any goiter in his family to his knowledge.

SUMMARY

In the patient's generation there are one brother and one sister with goiter. The mother, grandmother and great-grandmother had goiter, and two aunts and two great-aunts had goiter.

It is interesting to note that as far as the knowledge of the family goes, the disease was entirely confined to the female members until the present generation, in which one boy is affected.

Therapeutics

COLDS

It is generally understood by a cold that an acute rhinitis (coryza), acute pharyngitis, and perhaps acute laryngitis, tracheitis and bronchitis, one or more of these conditions, is present. The causes of "catching cold" are: infection, impure air, dust, a local tendency, a general tendency.

Most colds are contagious, more or less directly, and are likely "to run" through families, offices, stores and schools, once having started.

Impure air breathed in crowded rooms or vehicles, or in stuffy, ill-ventilated sitting-rooms or bedrooms is a distinct cause of nasal and throat congestions.

Dust-laden air, whether in buildings, vehicles or on the streets is conducive to nasal and throat irritation sufficiently to cause colds, and it is obviously noticeable that when cities neglect to water their streets, as they often do in the late fall (before, in the northern cities, the snow lays the dust) and in early spring, that catarrhal affections of the upper air passages are enormously increased.

A local tendency to colds is caused by chronic hypertrophies and congestions of the nose and throat, subacute or chronic catarrhs of these regions, by any condition of the lungs or heart that would tend to cause congestions of these mucous membranes, and especially by such a condition of the nose or nasopharynx mucous membrane (hypertrophy and adenoids) as will cause mouth breathing more or less constantly. Such patients are more prone to acute infections of the throat and lungs than are those who breathe through their nostrils.

A general tendency to colds is produced by a hypersusceptibility, or a diminished resistance power, to the ever-present germs and irritant dust particles in the atmosphere. Such a condition is brought about by any chronic debility or subnormal condition of the patient, be it anemia or a more serious condition. In many instances this general tendency to colds lasts a lifetime, and it may even occur in families, and any amount of hygienic care, good food and tonics may not prevent the frequent recurrences of colds. Such patients, if possible, should live in a climate that is not subject to radical changes in temperature and in a locality that is as dust-free as possible.

PROPHYLAXIS

To prevent colds such measures should be instituted as will prevent the above causes, and the order of their importance is really in the inverse order of the list of causes named. The general tendency to colds should be prevented by hygienic living, which means outdoor air and fresh, clean indoor air, and as fresh air while at work as can be acquired with the surroundings in which the person must be. Overheated rooms predispose to colds and are insanitary. An over-amount of clothing is inadvisable, but just what clothing is proper for each patient must be decided by good judgment and careful advice. Physical exercise or gymnastics should be advised for those who do not labor. Cold sponging in the morning of the face, neck and chest is advisable, and any treatment, massage, hydrotherapeutic or other, that will tend to make the general circulation of the skin better will prevent catching cold. Of course circulatory and digestive disturbances must be corrected, and the proper eating of the proper

food for the climate and time of year is a great aid by preventing such disturbances of secretions and excretions as cause the congestions that allow colds to develop.

Chronic inflammation of the upper air passages must be cured if possible. Local hypertrophies and superfluous glandular tissue should be removed.

Boards of health should have power to cause the prevention of street dust plagues and to cause proper cleanliness of public vehicles and public gathering places like halls, theaters, etc. A general public education on the seriousness of, and the infections carried by, unnecessary dust would soon cause such state legislation and city ordinances as would prevent this unnecessary nuisance. Many dusty occupations are made dustless by proper ventilating or suction apparatus, and where such prevention of dust is possible it should be required by law.

It is certainly inexcusable in this age to cause clerks in stores, or operators in factories, or children in schools, to have so few cubic feet of air space per individual as to allow impure air. Individual instances of such conditions are, of course, frequent and many, but the trend of public opinion and of public officials and of boards of health is to prevent these conditions. Many families are still very careless about the air in their rooms, and especially in their bedrooms. While urging plenty of fresh air during sleep, it is not advisable nor advised that enough windows, or windows and doors, be kept open to allow of strong drafts. The best plan is to have the doors of the sleeping-room closed, unless the room is very small, and one or more windows widely open.

The prevention of the spread of colds by infection in the household is simple, and it should be generally known that they are contagious and that a patient coughing and sneezing should prevent spraying by the constant use of his handkerchief. He also should keep away, or be kept away, from close contact with any other individual, unless, of course, the patient is a child. The patient should use plenty of handkerchiefs so as always to have a clean one at hand, and the handkerchiefs should be put into a handkerchief bag and then washed separately from other clothing. The rooms in which a patient with a severe sneezing and coughing cold has been, even for a short time, should be well aired. This is better for the patient and better for the rest of the family.

In public vehicles or in any public place, whether in schools, in stores or in factories, a patient with a cold and cough should always use his handkerchief and prevent spraying of the atmosphere. The more this is insisted on the less frequently will diphtheria, tonsillitis, pneumonia, tuberculosis, and even colds, occur. Spitting ordinances are now in evidence in most cities and should be in the smaller towns. It is indecent to spit in any place except receptacles prepared for that purpose, or, if must be, in the street gutters, and a patient with even nothing more than an ordinary sore throat or a simple bronchitis should seek running water into which he may expectorate if he does not care to use his handkerchief. An antiseptic cleansing spray or gargle for a patient who has a cold will prevent the infection of others.

ABORTIVE TREATMENT

A cold having been caught, the attempt to abort it is made by draining the blood vessels (catharsis, sweating) and thus relieving the local congestion, or by dilating the peripheral circulation and thus relieving tension, or by locally treating the inflamed mucous membrane either by astringents or by vasoconstrictors or by drugs that dry up the mucous secretion. During this first and acute stage of acute colds, and especially of coryza, various drugs and methods are used to further the indication for the relief of the local blood tension and the congestion of the local mucous membrane.

In four recent issues of the *New York Medical Journal* (Oct. 31, Nov. 7, Nov. 14 and Nov. 21, 1908), sixteen physicians have outlined what they considered the best treatment to abort colds. It is interesting to note that of these sixteen, fourteen advised the use of Dover's powder and two morphin. Four only advised a coal-tar product and then acetphenetidinum (phenacetin). Three advised Turkish baths, seven a hot foot bath, one a hot sitz bath, two hot lemonade, and two alcohol, presumably in some hot liquid. Five would give aconite, one veratrum viride and six would give quinin. One administers castor oil, three give calomel in one dose, two give calomel in divided doses, and one follows the calomel with a saline. Three would give salines alone. Sweet spirits of niter or a nitrate was advised by five. Atropin was advised by four, belladonna by three. Locally suprarenal extract in some form was advised by four, and various sprays containing camphor, menthol, etc., were advised by six physicians. Later, various sprays or washes, among which may be mentioned Dobell's solution, Seiler's tablet solution or boric acid solution, were recommended.

It is thus seen that the method of depletion of the blood vessels and the relief of local congestions most advised is that of sweating. Theoretically the best means to produce this kind of a sweat is by the Turkish bath or by hot-air treatment, the body baking as it is termed.

The next best would be a hot tub-bath, after which the patient is put to bed, with hot lemonade or other hot drinks, with or without alcohol, as deemed advisable. Most patients will not bother, however, with such treatment, and substitutes, as hot foot-baths and hot sitz baths are more likely to be employed, and if even these methods are not used, and even with these methods, Dover's powder in dose of 0.60 gram (10 grains), as the patient goes to bed, is certainly good treatment.

The administration of quinin to abort colds is not now much recommended by physicians, although often used by the laity. A dose sufficient to act as a derivative and perhaps inhibit the migration of the white blood corpuscles from the congested vessels, which it seems to be able to do, must be large enough to cause unpleasant cinchonism. Also the tendency of colds during the last few years has been to cause inflammation of the middle-ear. This being the case, physicians have become wary of using any drug like quinin which will cause middle-ear hyperemia and perhaps predispose to inflammation of the middle-ear. Theoretically, also, as most nasopharyngeal inflammations are due to some germ, leucocytosis and ameboid activity are needed to combat the infection, and quinin, if it does not actually inhibit leucocytosis, does inhibit the ameboid activity of the polymorphonuclear leucocytes. Consequently quinin and perhaps salicylic acid should not be administered unless there is some specific indication for them.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, JANUARY 16, 1909

THE FOOD VALUE OF MOSSES, SEAWEEDS AND SIMILAR ARTICLES

There has been a growing tendency to recommend for general consumption, as well as for special dietaries, a number of forms of carbohydrates that have not previously received much consideration as articles of diet and sources of nourishment. This tendency probably owes its recent growth to the combined influence of various cults and faddists, to commercial enterprise, and to the efforts to secure carbohydrate foods that might be used in place of starch and sugar in the menu of the diabetic. With this motley backing it is not strange that the claims made for the value of these unusual food stuffs have been commonly more enthusiastic than judicial, and that they have been used widely without due consideration of their real value as determined by observation and experiment. The careful review of the present status of our actual knowledge on this subject by Professor Mendel,[1] in whose laboratory much work along these lines is being done, comes at an opportune time.

These unusual carbohydrate foods, of which Iceland moss, agar agar, Jerusalem artichokes, dulse and salep are examples, are for the most part substances that long have been known as occasional articles of diet, and in some countries, especially Japan, they are commonly used as food, and the chief novelty about them consists in the attempt to increase their use as food in this country and in Europe. Most of them come from the lichens and algæ, and are cheaply and abundantly obtained in the localities in which they naturally occur; a few are derived from higher plants, as either gums or storage organs. In common they produce, on cooking and preparation for food, gelatinous or gummy products, and analysis shows them to be composed almost entirely of carbohydrates and therefore apparently highly nutritious. However, we are at last coming to appreciate that the food value of a substance can not be determined by ascertaining the amount of carbohydrates, fat and nitrogenous materials it may contain, for any and all these constituents may be present, but of no value because they are not available. This is particularly true of the carbohydrates, because the digestive enzymes which attack them are strongly specific, each enzyme limiting its action to one or to a few carbohydrates, in marked contrast to the proteolytic enzymes pepsin and trypsin which attack nearly all proteins. It is commonly understood that man can not utilize cellulose, as can some other animals, because he is not provided with digestive enzymes which can decompose the insoluble cellulose into assimilable sugars, but it is not so well appreciated that the peculiar carbohydrates of the algæ and lichens are closely allied to cellulose both as to chemical composition and availability. They are all formed of large aggregates of molecules of some sort of sugar united through a process of dehydration, which can be set free by a reverse process of hydration; and while cellulose is a polymer of the highly available glucose, the carbohydrates of the lichens, algæ and gums are for the most part polymers of less familiar, and probably less utilizable carbohydrates, such as pentose, methyl-pentose, galactose, and mannose. Therefore, before we can judge of the food value of any complex carbohydrate we must first know whether it can be hydrolyzed in the alimentary tract, and whether the sugars derived from it can be utilized in the metabolism of the human body. As a matter of fact, we have very little reliable evidence concerning the carbohydrates under discussion, and that which we have is largely negative.

As a typical case in point may be taken the history of inulin in modern dietetics. This substance is found in many of the compositæ, the chief source being in the tubers of the dahlia, and on hydrolysis it yields levulose. Now as levulose is readily used by the human organism, and especially as diabetics are supposed to tolerate levulose much better than dextrose, it is not surprising that inulin-containing substances have been recommended as substitutes for starchy foods in diabetes. Nevertheless, when tested experimentally it is found that salivary, gastric, pancreatic and intestinal juices all fail to hydrolyze inulin into lactose; furthermore, when fed to hungered animals it does not increase the glycogen-content of the liver as levulose does. Apparently, then, the inulin which is eaten is not utilized, and, therefore, it is not strange that the clinicians who gave it in place of starch to their diabetic patients found that it did not increase the sugar in the urine; neither would sawdust increase glycosuria, but that is scarcely sufficient reason for substituting it for bread.

Much the same results have been obtained with the polysaccharides of the algæ and lichens in so far as they have been studied; for example, Saiki examined a number of the preparations of this class which are used so abundantly in Japan, and found that they are utilized but poorly when taken into the alimentary tract, and it was demonstrated that Iceland moss resists attacks not only by the digestive enzymes but by the intestinal bacteria as well. These substances also, like inulin, have been recommended because they do not increase the gly-

1. Zentralbl. f. d. gesamte Physiol. u. Pathol. des Stoffwechsels, 1908, No. 17.

cosuria of the diabetic, but it is not probable that the diabetic will find them very satisfactory for the purpose of nutrition or for preventing acidosis.

Professor Mendel concludes his paper as follows: "The results of the experimental studies should warn us against the hasty acceptance of every so-called carbohydrate food stuff as real nutritive material. We must build on the basis of exact studies of metabolism. Many of the modern products have doubtless a deserved place in dietetics as accessory food stuffs both in health and disease, entirely independent of any actual nutritive function. And what has been said concerning the carbohydrates applies to the other components; for example, it has been believed that some of the algæ which are rich in nitrogen possess especial value because of the high protein content which the nitrogen is supposed to indicate. However, my experience with mushrooms, in which the abundant nitrogen was found to represent unavailable nitrogenous substances rather than proteins, teaches the need of caution in estimating the food value of such forms of plant life. Perhaps the fact that so few of the suggested food stuffs discussed above have found any general recognition, although they are widely disseminated in Nature, may be accepted as an instinctive expression of their lack of real nutritive value."

THE NOBEL PRIZE FOR 1908: METCHNIKOFF—EHRLICH

The Nobel prize in medicine for 1908 has been given to Metchnikoff and Ehrlich, the full prize having been divided. Whatever the reasons and motives may have been that led the wise men in Stockholm thus to divide the prize, there is no question whatsoever but that in the opinion of those competent to judge of the value of the scientific work of Metchnikoff and Ehrlich, each has earned the undivided prize. This is so apparent that special considerations in addition to those of individual merit must have led the committee to divide the prize. Speculation as to what these special considerations may have been would be useless. On the other hand, a glance or two at the work of the two prize-winners is in order.

Originally a Russian zoologist, Metchnikoff became our first great comparative pathologist. His chief credit is the establishment by extensive comparative studies of the occurrence of phagocytosis in all classes of animals and its significance in infections. In all animals the most striking phenomenon in the reactions to infection and injury seemed to him to be phagocytosis and hence arose the phagocytic theory of healing and immunity. This theory Metchnikoff and his followers defended with great skill and ingenuity against the violent attacks on it by the adherents of the humoral theory of immunity, especially in Germany. The resulting controversy proved a powerful stimulus to investigation and a degree of harmony has been reached as it has become clear, on the one hand, that cells are essential to the production of the antibodies that give to the fluids of the body their protective and healing properties, and, on the other hand, that the fluids of the body are essential to phagocytosis. In other words, neither theory alone accounts fully for the phenomena of healing and immunity, but both taken together go far toward furnishing a satisfactory explanation. Phagocytosis will ever be regarded as an important means of defense and healing, a few lingering, repetitive protests in Germany to the contrary notwithstanding.

Since the controversy in regard to phagocytosis passed its height, Metchnikoff has carried out important experiments on the inoculation of syphilis in apes and monkeys—this in conjunction with Roux—and in addition he has occupied himself with his interesting speculations on the prolongation of human life, concerning the value of which opinion is divided.

Familiar through his early and special work on the differentiation by selective staining of leucocytes, Paul Ehrlich is best known as the father of the side-chain theory. First advanced in order to explain the action of bacterial and other toxins and the formation of antitoxins, it soon proved equally applicable to the explanation of the action of antigens and the formation of antibodies in general.

The theory is so familiar that it is not necessary to restate it except in the briefest possible form: A toxin or any other antigen is without action unless bound by suitable molecular chains in the cells—receptors—but when so bound the antigen causes injury to the cell and in the process of repair there results an overproduction of receptors which on passing into the blood constitute the antibody for the antigen in question because the antigen is now bound and neutralized before it can reach the cell. Antibodies are free cell receptors and the elements that, when situated in the cells, are essential for the action of toxins, for instance, are also the means of healing when free in the blood. This beautiful theory is one of the greatest in science. It has been and is still of the greatest usefulness in stimulating and guiding investigation in the field of immunity and of related biochemical phenomena.

Numerous new words coined by Ehrlich in accord with this theory have proved helpful in facilitating discussion of new facts and ideas and have passed into current international usage.

Guided by the principles of the side-chain theory Ehrlich developed a method for standardizing antidiphtheria serum which has been adopted officially and is now used daily by most countries, including our own.

More recently Ehrlich has advanced interesting considerations in regard to experimental cancer in mice, immunity to which he explained on the basis of the side-chain theory, and he has also found help in his theory in his recent and brilliant chemo-therapeutic studies,[1] the aim of which is nothing less than to dis-

1. THE JOURNAL, Dec. 5, 1908, p. 1976.

cover new chemical substances with specific curative properties for certain infections, at present more particularly trypanosomiasis.

The name of Ehrlich will live in honor in the history of medicine because his theory has promoted rational treatment of infectious diseases and aided our understanding of biochemical manifestations.

THE EVOLUTION OF THE CEREBRAL CORTEX

The problem of the structure and functions of the cerebral cortex is intimately bound up with its evolutionary history. This history has been assiduously studied during the whole modern period of comparative anatomy, notable contributions coming from Edinger and Elliot Smith, who have shown how the whole forebrain has been built up around what is in the human brain one of its relatively unimportant parts, the olfactory apparatus. The earliest cerebral cortex to appear was olfactory in function, the hippocampal formation, and has been termed the "archipallium" to distinguish it from the more recently evolved cortical centers for the other senses and their motor return paths, the neopallium.

The fundamental and far-reaching character of this distinction is confirmed by the researches of Flechsig on the sequence of development of the conduction paths in the human cerebrum, for he finds that the olfactory cortical connections come to maturity in general earlier than those of the neopallium.

A notable series of researches bearing on the phylogeny of the forebrain has recently come from Edinger's laboratory at Frankfurt, and the chief results are incorporated in the second volume of the seventh edition of Edinger's[1] lectures on the central nervous system. The most important point is that the earliest cortex cerebri was evolved, not merely as an olfactory cerebral center, but as an organ of correlation for all the organs of sense and motion connected with the nose, mouth and lips, a sensation complex termed by Edinger the "oral sense" (*Oralsinn,* Edinger, *Schnüffelsinn,* Kappers).

In the lowest vertebrates the olfactory paths are certainly the most important elements of this complex, but as we ascend the animal series other sensory conduction paths to the forebrain are progressively added. In reptiles and birds there is a strong secondary tactile path from the nuclei of the trigeminus to the forebrain, but this does not reach the cortex. The corpus striatum in these animals is very large and here the reflexes of the oral sense are elaborated, the cortex being very imperfectly developed.

The true olfactory cortex (called the hippocampus or the archipallium) in the earlier phylogenetic stages greatly predominates over the neopallium; nevertheless both appear very early and, according to these latest researches, their evolution is mutually interdependent.

Thus the architectural motive which first called forth the cortex cerebri was the demand for a more extensive and flexible type of correlation center for the reflexes concerned with feeding and finding food. The visual and acoustic paths were very early added to the neopallial part of the wall of the hemisphere and later (in the mammals) the functions of the forebrain were enlarged to include all of the more complex reactions to stimuli coming from objects at a distance from the body, or, as Sherrington[2] expresses it, the forebrain becomes the integrating organ for the distance receptors.

Some of these reactions are, no doubt, unconscious reflexes — very complex, perhaps, yet wholly mechanical. Reflexes of this type are common to the whole of the basal or stem portion of the brain. On the other hand, the sense organs which receive impressions from remote objects, such as the eye and ear (distance receptors of Sherrington) may involve a type of response very unlike the reaction of the body to stimuli whose sources are in contact with the body. In the latter case the adaptive response follows immediately on the stimulus, and the more perfectly it is mechanized the better.

But the reaction to a distant object, say the prey of a carnivorous beast, involves two separate factors: (1) an anticipatory reaction (movement toward the prey and seizing it), and (2) the consummatory reaction (mastication and swallowing). Since the anticipatory phase of itself gives no immediate satisfaction, it follows that this complex reaction to distant objects involves much more elaborate associational processes in the nervous system than the simpler response to contact stimuli; and the more complex the anticipatory phase becomes, the more intricate the necessary coordinating mechanism must be. It is in this more complex type of distance reaction alone that a high degree of intelligence is necessary; indeed, here only where foresight (literal and figurative) precedes the satisfying consummatory reaction, is the participation of intelligence desirable or possible to any great degree, as Sherrington has clearly shown in the work cited above.

The cerebral cortex, then, became the chief organ of intelligence because it only is structurally adapted to serve the complicated correlations of sensory stimuli involved in the anticipatory reactions which alone call for special intelligent adaptations.

In some of the lower mammals the sense of smell is apparently the most important of the distance receptors, and here the archipallium is the most important part of the cerebral cortex. In these cases the mental imagery is doubtless elaborated very largely in terms of olfactory sensations. In man, however, the most important asso-

1. Vorlesungen über den Bau der nervösen Zentralorgane, Vergleichende Anatomie des Gehirns, Leipsic, ed. 7, vol. ii, 1908.

2. The Integrative Action of the Nervous System. New York, 1906.

ciations are in terms of sight and hearing. Accordingly, the neopallium dominates the human brain.[3]

The study of the minute structure of the cerebral cortex is now pursued more actively than ever before, and the chief problem here is the correlation of the demonstrable anatomic differences between the different cortical areas with the sensorimotor associational and projection fibers which put these areas into functional relation with each other and with the periphery. Until these facts are much more fully known than at present it will be impossible to elaborate the doctrine of cortical localization on a firm basis.

HOW TYPHOID BACILLI MAY REACH THE GALL BLADDER

The modern microbe carrier presents many interesting and difficult problems that await solution. In the case of the typhoid carrier the great question is how to rid the intestinal tract of typhoid bacilli which appear to live on there or to be eliminated by way of the intestinal contents, sometimes for remarkably long periods.

The theory has been advanced that in these cases the bacilli live on and multiply in the contents of the gall bladder whence they pass into the intestines and appear in the feces. This theory which has many facts in its favor naturally led to the idea that removal or drainage and irrigation of the gall bladder would permanently free the carrier of his bacilli. On account of the great importance of the carrier in spreading typhoid fever this would have been a most welcome solution of a problem surrounded by many and novel difficulties, but apparently the conditions are not so simple as was at first assumed. It was soon found that the disappearance of the bacilli from the feces after operations on the gall bladder in some cases was only temporary. It seems certain, therefore, that, at least in some cases, the bacilli find a permanent abode elsewhere than in this viscus.

Certain observations indicate that one such place is furnished by the larger bile ducts. The cystic duct has been found completely obliterated by impacted calculi in the case of a paratyphoid carrier so that the gall bladder could not be regarded as the reservoir for the bacilli which continued to be eliminated in the feces after cholecystostomy. Highly interesting results pointing in the same direction have been obtained by recent microscopic studies of the gall bladder and bile ducts in typhoid fever and experimental typhoid infection.

Chiari and others long since called attention to the fact that anatomic changes in the gall bladder occur in typhoid fever, but the exact mode of origin of these changes does not seem to have been made out. Joseph Koch,[1] in an instance of beginning typhoid cholecystitis, found marked inflammatory infiltrations into the mucosa, especially at the summits of the folds, often enclosing dense masses of bacilli which gave all the appearance of being capillary emboli. From these foci the bacilli are assumed to have passed through the epithelium into the contents of the gall bladder. Heretofore the bacilli have been thought to reach the interior of the gall bladder by way of the biliary secretion, but it would seem that they may do so from the capillaries in its walls as well, and the point should receive special attention hereafter.

In order still further to study this question, Koch injected rabbits intravenously with typhoid bacilli, which he found would reach the interior of the gall bladder even when the cystic duct was tied beforehand. He claims to be able to follow the transit of the bacilli through the wall from emboli in the capillaries of the submucosa. Not only the walls of the gall bladder but also those of the larger bile ducts of the rabbits showed the same inflammatory changes as were found in the human gall bladder.

This localization of the bacilli in the walls of the biliary apparatus may be the reason why the process of bacillary elimination continues for such a long time in many carriers, as well as why it has proved so resistant to the means so far used to cut it short. A thorough study of a large amount of typhoid material with special reference to the manner of invasion of the bile by the typhoid bacilli is desirable. Koch's human material is too small to permit of the acceptance of his interesting results as definite, and comprehensive knowledge is necessary in order to learn how best to deal with the carrier.

WALKING

An item in our London letter this week again calls attention to a form of exercise as healthful as, in this country, it is uncommon. Surgeon-Major Hinton, who enjoys the distinction of being the oldest member of the Royal College of Surgeons, in his ninety-fifth year is reported as "walking for pleasure five miles or more a day." How many Americans—physicians or laymen—of even one-third the age of this veteran surgeon walk half that distance daily? In the country the buggy, in the city the ubiquitous street car, and in both the ever-increasing number of automobiles, all operate to make us a nation of riders rather than of walkers. While within the past year walking has been taken up as a passing fad, pedestrianism as a recreation is practically unknown in this country. So much is this so that a man seen walking along a country road is mentally estimated as either a book agent or a tramp — the estimate varying according to his general appearance. Thus a vicious circle is established and the thought of being considered eccentric operates to make walking unpopular. Yet from a hygienic standpoint there is prob-

3. A fuller treatment of these interesting comparative studies will be found in an address recently delivered by Professor Edinger before the Third Congress for Experimental Psychology and printed in English translation under the title, The Relation of Comparative Anatomy to Comparative Psychology, in the Jour. Comp. Neurol. and Psychol., November, 1908.

1. Centralbl. f. Bakt., 1908, xlii, (Supplement) 54.

ably no healthier or more invigorating form of exercise. The various ingenious substitutes in the form of calisthenics are, as is the case with all substitutes, a poor excuse for the real article. Horseback riding, which seems to be popular among a certain class, is probably equal to walking as a form of exercise. But horseback riding is possible only for the few, certainly not for the average city dweller. Walking is possible for all, and a brisk four- or five-mile walk, taken not as a duty but as a recreation, is a physical and mental tonic of no mean value. Did it cost money instead of involving effort it would be more popular.

THE BEGINNING OF THE CONTRACTION OF THE VENTRICLE OF THE HEART

There has long been dispute as to whether the ventricle of the heart begins to contract at its base or at its apex. The proximity of the base of the heart to the auricle or atrium lends color to the view that the basal portion of the ventricle contracts first. The recent studies of Tawara, Retzger and others on the distribution of the stimulus-conducting system continuous with the bundle of His have shown that the fibers pass downward into each ventricle to the region of the papillary muscles, where they break up into arborizations and are distributed thence partly toward the base of the heart, partly toward its apex. This anatomic distribution suggested that the base of the papillary muscles and the lowermost portions of the wall of the ventricle must receive the stimulus to contraction before the muscle fibers at the base of the heart. This probability has been subjected recently to experimental test by Rehfisch.[1] Working on the dog's heart by physiologic methods he has been able to demonstrate in graphic curves that the heart's apex receives the impulse to contraction before any other part of the ventricular wall, and that the stimulus to contraction is propagated to the base of the heart from it. These experiments of Rehfisch seem to be convincing, and if he is right the fact may perhaps be applied by clinicians in explaining the phenomena which pertain to the emptying of the ventricle in myocardial disease.

TUBERCULOSIS CURES

Probably no disease has been the subject of so much altruistic and altogether unselfish study, and its eradication the object of so great an amount of self-sacrificing labor, as has tuberculosis. Conversely, no other disease has been made the basis of so much heartless fraud in the exploitation of commercial "cures." The reason for the latter is not hard to find. Sufferers from tuberculosis die slowly and until the very last they are persistently optimistic as to the outcome. The average consumptive, even though intelligent above the ordinary, is ever ready to grasp the proverbial straw in the form of any much-vaunted "specific" for his dreaded malady. Such material as this is to the "consumption cure" faker what the confirmed gambler is to the tipster. From the sordid and brutal standpoint of the medical quack the victim of tuberculosis is an easy prey. These facts, patent to every one who has looked into the innumerable "cures" on the market, are well exemplified in the article on another page[1] dealing with an institution of this kind. We have investigated this cruel fake with some degree of thoroughness, and we believe a perusal of the results, while not pleasant reading, will prove instructive. It should be borne in mind, however, that this particular concern is but a type. Scattered all over this country are scores, yes hundreds, of other similarly vaunted "cures." THE JOURNAL can expose but a few of them; their elimination can be brought about only by enlightening the public on their inherent worthlessness and viciousness, and this duty devolves on the medical profession.

1. Rehfisch, E.: Ueber die Ursprungsstelle der Ventrikel-Kontraktion; ein Beitrag zur Lehre von der Reizleitung im Herzen, Berl. klin. Wchnschr., 1907, xliv, 1070.

Medical News

ILLINOIS

Estate to University.—By the will of Dr. James G. Wheeler, Broughton, the James Milliken University, Decatur, will come into possession of his estate, estimated to be worth from $75,000 to $125,000.

Scarlet Fever.—The public schools of Sycamore and Crystal Lake have been closed on account of scarlet fever. Rigid and thorough isolation of dairies on farms where there are cases has been established at Crystal Lake, through the efforts of Dr. Harry D. Hull, Nunda, health officer of McHenry County, who has been appointed special agent of the Chicago Board of Health.

Chicago

Illegal Practitioner Fined.—Peter Rundberg is said to have been found guilty of practicing medicine without a state license and to have been fined $100. The complaining witness was an inspector for the State Board of Health.

Funds for Hospital.—The Maimonides Kosher Hospital Society has begun active work to raise funds for a hospital for orthodox Jews, to cost $75,000. A site has been purchased for $6,500 on California Avenue, near Rebecca Street, facing Douglas Park. The proposed hospital is to have a capacity of 100 beds.

Milk Law in Effect.—The new milk law which requires the pasteurization of all milk and milk products other than those from cows which have passed the tuberculin test, technically becomes effective January 1, but complete enforcement will require several months. Meanwhile health officials are proceeding with routine measures to secure wholesome milk.

MARYLAND

Baltimore Personal.—Dr. Charles Downs has been appointed a tenement inspector.——Dr. John J. R. Crozer is reported to be critically ill with kidney disease.——Dr. William Whitridge is reported to be ill at his home with acute gastritis.

Opposition to Merger.—Much opposition is manifested to the proposed union of the University College of Medicine, the College of Physicians and Surgeons, and the Baltimore Medical College, which has been under discussion for a year or more, and little progress apparently is being made toward the merger.

Accidents in Baltimore.—During 1908 there were 2,726 minor accidents in Baltimore, of which 372 were due to street cars and 59 to steam cars. There were 260 fatal accidents, for 23 of which street cars, and 34, steam cars, were responsible. There were 210 attempts at suicide, of which 120 were unsuccessful.

Insane Hospital Report.—The one hundred and eleventh annual report of the Maryland Hospital for the Insane, Catonsville, for the year ended November 1, shows a daily average of patients under treatment of 574, the largest in its history. The number discharged recovered was 30 per cent. Tuberculosis was discovered in 13 per cent., and a

1. Pharmacology Department, page 226.

special building is needed for this class of patients. There is also needed an isolation hospital for the sick, a new dining hall for female patients, a hospital for colored insane, and an institution for the criminal insane.

MASSACHUSETTS

Personal.—Dr. Albert W. Hancock, Lawrence, has recovered from his recent attack of diphtheria.——Dr. Frank B. Pierce, Haverhill, has had his thumb amputated on account of septicemia.——Dr. Walter R. Mansfield, Boston, has been made a member of the board of bath trustees.——Dr. Foster H. Smith has been elected city physician of Lowell.——Dr. Albert P. Norris, medical inspector for the state and city of Cambridge, has resigned.

Work of Antituberculosis Society.—At the annual meeting of the Brookline Antituberculosis Society, it was shown that the society had a membership of 347, a balance in the treasury of $492, and that much good work had been done along the lines of a day camp for children and the inspection of home conditions of patients. A night camp for convalescents who work during the day and an open-air school for children who show signs of tuberculosis are proposed for the coming year.——The Lawrence Antituberculosis League has issued a circular calling attention to the necessity of the work against tuberculosis and inviting membership. The following are the medical officers of the league: Dr. Charles G. Carleton, president; Dr. George B. Sargent, vice-president; Dr. J. Forrest Burnham, secretary; Drs. W. H. Coon and George B. Sargent, executive committee; Drs. W. H. Coon, Carl H. Eidam, Frank B. Flanders and George P. Howe, directors; Dr. George P. Howe, director of tuberculosis class; and Dr. Alexander L. Siskind, medical supervisor.

MICHIGAN

Personal.—Dr. Robert McGregor, Saginaw, sailed from Vancouver, January 1, for a visit to Australia and New Zealand. ——Dr. Wadsworth Warren, Detroit, has been elected fleet surgeon of the Interlake Yachting Association, and Dr. Charles G. Jennings, Detroit, delegate to the Yacht Racing Union.

Work of the Health Board.—On January 8, in the series of lectures being given at the Grand Rapids Public Library on the work of the various boards and departments of the city of Grand Rapids, the health officer, Dr. William Delano, and the superintendent of the poor, gave an illustrated lecture on the work of the health department and poor commission. During the year, $35,537 was appropriated for the health department, and also a special fund of $11,543 for the building and furnishing of a new contagious disease hospital.

MINNESOTA

New Hospital.—The Northwestern Hospital and Zander Institute, Moorhead, completed at a cost of about $45,000, was dedicated with appropriate ceremony December 13. Dr. Edward W. Humphrey is physician-in-charge.——Work has been begun on a sanitarium near Shakopee by Dr. Henry P. Fischer.

Society Meeting.—At the annual meeting of the Minnesota Valley Medical Association, held in Mankato, December 8, the following officers were elected: President, Dr. Ferdinand N. Hunt, Blue Earth; vice-presidents, Dr. A. Franklin Strickler, Sleepy Eye, and Lida Osborn, Mankato; secretary, Dr. Adolph G. Liedloff, Mankato, and treasurer, Dr. George F. Merritt, St. Peter.

Tuberculosis Relief.—At the meeting of the St. Paul Tuberculosis Relief Committee, it was announced that "Tag Day" contributions had reached the total of $17,869.79, of which one individual contributed $2,500. Five free dispensaries are to be established in various parts of the city, and Drs. Longstreet Taylor and Charles L. Greene, and Robert O. Earl are the medical members of the board of management.

MISSOURI

License Revoked.—The State Board of Health announces the revocation of the license of Dr. H. M. Wilson, Forest City, for writing prescriptions for spirituous liquor.

Society Meetings.—At the anuual meeting of Montgomery County Medical Society, held in Montgomery December 17, Dr. Alonzo R. Kieffer, St. Louis, president of the Missouri State Medical Association, delivered the address, and the society decided to make application for affiliation with the state body, and elected Dr. David O. Nowlin, Montgomery, delegate. The other officers elected were as follows: President, Dr. Samuel S. Cox, Wellsville; secretary, Dr. Wiliam M. Wheeler, High Hill, and treasurer, Dr. George E. Muns, Montgomery.——The next meeting of the Missouri Valley Medical Society will be held in St. Joseph, March 18 and 19.

St. Louis

For Earthquake Sufferers.—A committee of the St. Louis Medical Society will collect funds for the relief of the earthquake sufferers. Dr. Herman Tuholske was made chairman and Dr. Meyer Wiener, secretary. An appeal for money was sent to each registered physician of St. Louis and to some St. Louis alumni societies.

Alumni Banquet.—The annual banquet of the Medical Society of the City Hospital Alumni was held January 7, at Faust's Cabin. The following are the newly elected officers of the society: Dr. Walter Baumgarten, president; Dr. John C. Falk, vice-president; Dr. William H. Luedde, secretary; and Dr. E. Lee Dorsett, treasurer.

NEBRASKA

Medical Society Meetings.—At the annual meeting of the Fillmore County Medical Association, held in Geneva, December 8, Dr. V. V. Smrha, Milligan, was elected president; Dr. Morgan Propst, Geneva, vice-president; Dr. Frederick S. Beck, Geneva, secretary-treasurer, and Dr. Royal Woods, Geneva, delegate to the state society.——At the annual meeting of Saline County Medical Society, held in Crete, Dr. Jan Cepelka was elected president; Dr. F. J. Stefskal, vice-president, and Dr. F. Brown, secretary.

Personal.—Dr. John S. Leonhardt, Lincoln, chairman of the health committee of the city council, has resigned.—— The case of Marion Leidig against Dr. Elisha M. Whitten, Nebraska City, for malpractice, in which $5,000 damages were claimed, has been settled and dismissed.——Dr. Jan Cepelka, Crete has sailed for Europe.——Dr. Henry S. Summers, West Point, has announced his intention of relinquishing practice.——Dr. G. W. Weeter, Grand Island, was struck by a passenger train while driving across the railway tracks, January 5, and seriously injured.

NEW JERSEY

Hospital Needed for Epileptic Village.—The annual report of the State Village for Epileptics shows that the institution is in need of a hospital. The patients live in cottages, segregated by sexes, and a hospital is needed for general medical purposes. There are 266 inmates in the cottages, an increase of 35 as compared with the previous year.

Personal.—Dr. Charles B. Smith, Washington, lost the sight of one eye and the other eye was seriously injured as the result of carbolic acid thrown in his eyes by an insane patient. ——Dr. William J. Chandler, South Orange, fell down the cellar stairs of his office recently, breaking two ribs and one vertebra.——Dr. Henry O. Carhart, Blairstown, fractured both his legs and sustained internal injuries in a collision between his carriage and a railway train January 3.——Dr. Thomas K. Reed, Atlantic City, who has been seriously ill with gastritis, is reported to be improving.——Dr. Charles J. Craythorn, Trenton, was operated on at Mercer Hospital, December 29, for the removal of gallstones.——Dr. George J. Holems, Newark, has been appointed chief medical inspector of the board of education.———Dr. Leon Harris, house surgeon of the Orange Memorial Hospital, was operated on for septicemia, December 16.

NEW YORK

Campaign Against Tuberculosis.—During the latter part of November, Elmira began a campaign against tuberculosis which was conducted by the State Charities Aid Association and the New York State Department of Health in connection with the Ninth New York State Conference of Charities and Correction. A series of meetings was held, which extended through the entire week.

Gift for Elmira.—Mr. and Mrs. Charles E. Rappelyea, Elmira, have furnished a suitable site and thoroughly modern well-equipped hospital for the care of persons having tuberculosis, in the city of Elmira, on condition that the hospital shall be maintained in a completely up-to-date manner by the city at public expense and that it shall be free to citizens of Elmira, except that the hospital may receive compensation for treatment therein from patients able to pay, to the extent of such ability.

Vaccination.—The New York State Department of Health has issued an illustrated pamphlet entitled "Vaccination; What It Is, What It Does, What Its Claims are on the People," prepared by Dr. Frederick C. Curtis, Albany, consulting dermatologist of the board, which describes smallpox, how to know it, the early protective measures, how it is contracted, its prevailing type, what vaccination is, its technic, the source

of virus, the efficiency of vaccination, the duration of protection by vaccination, the contraindications, complications and dangers of vaccination, the state laws regarding it, the opposition to vaccination, and its claims on the people.

Object to Civil Service Restrictions.—It is proposed by the state commission to bring within the competitive schedule all the attendants, outside workers on hospital grounds and various other minor employés whose compensation ranges from $18 to $100 a month with maintenance. At the hearing before the state commission there was much opposition to the proposed change from Dr. Albert W. Ferris, New York City, president of the State Lunacy Commission, and Drs. William Mabon, Richard H. Hutchings and Charles G. Wagner, superintendents of the Manhattan, Ogdensburg and Binghamton state hospitals, respectively. They protested on the ground that they now have great difficulty in getting persons to accept hospital service, and that to add civil service restrictions would make it practically impossible to get such help.

Personal.—Dr. Eugene H. Porter has been appointed State Commissioner of Health for a term of four years, and his appointment has been confirmed by the senate.——The Batavia Physicians' Club met January 5, and marched to the house of Dr. Horace S. Hutchins to pay their respects to him on the occasion of the eightieth anniversary of his birth and his completion of half a century of practice in Batavia.——Dr. Matthew D. Mann has been elected second vice-president, and Drs. John H. Pryor and DeLancey Rochester a committee on hospitals in the newly-established Buffalo Association for the Relief and Control of Tuberculosis.——Dr. Henry R. Hopkins, Buffalo, has resigned as chairman of the Erie County board of censors.——The East Aurora home of Dr. Harvey R. Gaylord, director of the New York State Cancer Laboratory, has been totally destroyed by fire.

New York City

Lecture on Living Anatomy.—Prof. Thomas M. Rotch, Harvard University, delivered a lecture to the students of the New York University and Bellevue Hospital Medical College, January 5, on "Living Anatomy, Its Practical Utility in Safeguarding the Early Life," illustrated by lantern slides and the epidiascope.

Personal.—Dr. George E. Deely, Brooklyn, has just returned after eight months in Vienna.——Dr. John D. MacLaren has been elected professor of physiology in the Medical School of the State University of Oklahoma, Norman.——Dr. Francis LaBaron, New York City, was knocked down by a street car December 21, and seriously injured.

Sea Breeze Hospital.—The association which maintains this hospital at Coney Island reports that in the last two years 50 patients have been cured there of tuberculosis of bones, glands and joints. The 41 patients now there are making satisfactory progress toward recovery. The association is waiting for the acquisition by the city of a suitable site for what is intended shall be an adequate municipal hospital for the care of non-surgical tuberculosis in children. The association has raised a fund of $250,000 to construct the first division.

Roosevelt Ambulance Service to Stop.—At a meeting of the board of governors of Roosevelt Hospital it was decided to discontinue the ambulance service after March 1, 1909. It is believed that this action of the board was caused by the many criticisms of the hospital authorities in connection with the transferring of patients to Bellevue Hospital. Coroner Harburger says that this action was due to a verdict of a recent inquest censuring the hospital. The coroner has made arrangements with the Department of Charities to create a new district for Bellevue Hospital.

Tuberculosis Exhibit Needs Funds.—The International Tuberculosis Exhibition at the Museum of Natural History will be obliged to close at once because of lack of funds, unless $16,000 be raised. Before the exhibition opened on November 30, plans were made for an estimated attendance of 300,000, but already an attendance of 450,000 has been recorded, and at the present rate the attendance will reach nearly 800,000. December 27 was Jewish Day, and the counters registered 63,112 visitors; the best previous record was 43,713. It is to be sincerely hoped that the desired funds will be obtained to continue this good work.

Fewer Deaths, More Births.—The report of vital statistics for the last year shows 126,863 births, a rate of 28.68 per 1,000. The number of deaths during the last year was 73,071, or 16.52 per 1,000, the lowest in the history of the city. The number of deaths was 9,249 less than the average number for the last five years. This total was due to a decrease of 197 deaths from typhoid fever, 317 from diphtheria, 573 from tuberculosis and 3,015 of children under 5 years of age. There were slight increases in the number of deaths from measles and cancer. There were 599 more from scarlet fever and an increase of 151 in the number of suicides.

Cars and Tuberculosis.—Vice-President Hedley of the Interborough company says that they are taking every precaution to keep the cars in a sanitary condition. The old thick matting has been replaced by hard maple strips, and every night the floor of every car is sprinkled with a 5 per cent. solution of carbolic acid. The floors are then swept and after the dust has settled it is wiped up with cheesecloth. Every week the floors are scrubbed with a soft soap containing so strong a solution of alkali that it removes the paint whenever it is allowed to come in contact with it. Every month the interior of every subway car is cleaned with an emulsion which gathers up all the fine particles of dust, and every year at least, every car is painted, varnished and oiled. The straps are cleaned every night with an acid solution which will kill any germ.

NORTH CAROLINA

Personal.—Dr. James A. Hayne, Greenville, who has been a medical officer in the Canal Zone for two years, has been transferred to the sanitarium on Bogota Island, Panama Bay.——Drs. Robert L. Gibbon and Charles H. C. Mills have been made chief surgeons on the staff of St. Peter's Hospital, Charlotte.——Dr. William H. Whitehead, Rocky Mount, has been obliged to relinquish his practice temporarily on account of ill health.

Suit Compromised.—The suit brought by Dr. L. V. Cloninger, Shiloh Township, Iredell County, against Dr. E. M. Yount, in which the allegation was made that the defendant had disregarded the terms of sale by accepting professional calls in that section of the county, is said to have been compromised December 23, by the payment of $800 to Dr. Cloninger, leaving Dr. Yount thereafter free to accept all calls in Shiloh Township.

State Hospital Reports.—The biennial report of the State Hospital for the Insane, Morganton, shows a mean death rate for the biennium, of 3.4 per cent., while the recoveries were 34 per cent. of the admissions, and the per capita expense was $152.33. A special appropriation of $30,000 is asked for the construction of an additional building to accommodate 100 men patients.——The annual report of the Central Hospital for the Insane, Raleigh, shows a per capita annual cost of $167.25. During the biennium an annex has been erected at a cost of $64,000, and two other annexes have been commenced, one of which is to accommodate 80 female patients.

OHIO

Illegal Practitioner Fined.—William Newton, Dayton, who pleaded guilty December 2, to practicing medicine without a license, is said to have been fined $300 and costs, but the fine was suspended on his promise to take down his sign and discontinue the illegal practice.

State Medical Board Elects.—The State Board of Medical Registration has organized by the election of the following officers: President, Dr. Augustus Ravogli, Cincinnati; vice-president, Dr. Sylvester M. Sherman, Columbus; secretary, Dr. George H. Matson, Columbus; and treasurer, Dr. Edward J. Wilson, Columbus.

Academy Election.—At the annual meeting of the Columbus Academy of Medicine, held December 21, Dr. Charles J. Shepard was elected president; Dr. Jesse A. Van Fossen, vice-president; Dr. T. Alfred Fletcher, secretary; Dr. R. Blee Smith, treasurer, and Drs. James U. Barnhill and Pinkney D. Shriner, delegates to the state association.

Medical Teachers Meet.—The fourth annual meeting of the Ohio Association of Medical Teachers was held in Columbus December 28. There was practical unanimity as to the colleges in the state raising the entrance examination to include one year of literary college work in biology, chemistry and physics. The association also passed resolutions commending the State Medical Board for conducting practical examinations in biology, bacteriology and embryology, and recommended that clinical medicine be added to the list of branches in which practical examinations are conducted. The visiting members were entertained by the local teachers with a dinner at the Great Southern Hotel. The following officers were elected: President, Dr. James U. Barnhill, Columbus; vice-presidents, Drs. William E. Lewis and John A. Thompson,

both of Cincinnati; secretary, Dr. Elmer I. McKesson, Toledo; and treasurer, Dr. Charles W. McGavran, Columbus.

Cincinnati

The Eichberg Professorship.—Between forty and fifty thousand dollars have already been subscribed to establish a chair of physiology at the University of Cincinnati in honor of the late Dr. Joseph Eichberg. The entire amount needed for the endowment of the chair is $100,000. Dr. N. Pendleton Danbridge is chairman of the committee which has the matter in charge.

Annual Meeting of Academy.—At the annual meeting of the Cincinnati Academy of Medicine, January 5, the following officers were elected: President, Dr. Rufus B. Hall; vice-presidents, Drs. Samuel E. Allen and Edward S. McKee; secretary, Dr. E. Otis Smith; treasurer, Dr. Alexander G. Drury; librarian, Dr. Arch I. Carson; censor, Dr. John E. Greiee, all of Cincinnati; and trustee, Dr. James F. Heady, Glendale.

Preservation of Records.—The Western Association for the Preservation of Medical Records has been organized in Cincinnati with the following officers: President, Dr. Charles A. L. Reed; vice-presidents, Prof. John Uri Lloyd and Drs. Phineas S. Conner and Jirah D. Buck; secretary, Dr. Otto Juettner; and librarian, Dr. Alexander G. Drury. The records will be kept in the Lloyd Library pending the erection of a fireproof medical library building.

PENNSYLVANIA

Bequest to Pittsburg Hospitals.—By the will of the late George L. Laughlin, Pittsburg, $25,000 each is bequeathed to the Pittsburg Hospital for Children, South Side Hospital, Mercy Hospital, Protestant Home for Incurables and Memorial Home for Crippled Children.

Portraits Presented.—At the annual meeting of the Berks County Medical Society, held in Reading December 8, Jacob V. R. Hunter presented to the society, in behalf of the mother and family, a portrait of Dr. Charles H. Hunter, and S. E. Kerts, in behalf of the daughter of the late Dr. Edward Wallace, presented his portrait to the society.

For a Pure Water Supply.—By direction of the State Health Commissioner, a survey is being made of the Youghogheny River watershed in Somerset County. All the houses, barns, outhouses, manure piles and every source of filth will be located on the map, along all the tributaries of the river, locating all sewers that empty into them, with a view to the proper policing of the same in order to ensure a pure water supply. There have been outbreaks of typhoid fever and diphtheria at times in the county and at present there are several cases of the latter disease in Meyersdale.

Personal.—Dr. John Todd, Pottstown, has been reappointed a member of the local board of health.——Dr. Henry Sommers, Jr., pathologist at the Norristown State Hospital for the Insane, has been appointed superintendent of Blair County Hospital for the Insane, Hollidaysburg, vice Dr. Thomas F. Neal, resigned.——Dr. Abraham S. Wilson, Bristol, is reported to be in a critical condition from valvular heart disease in the Medico-Chirurgical Hospital, Philadelphia.——Dr. Edgar M. Hazlett has been appointed medical director of the State Tuberculosis Dispensary, Washington, and Dr. T. Edmund Mills, director of the dispensary at Pottstown.

Philadelphia

Personal.—Dr. Wiliam W. Keen has been elected president, and Dr. James M. Holland, vice-president of the American Philosophical Society.——Dr. Francis X. Dercum has been elected a member of the Neurological Society of Paris.——Dr. Camillo Feo recently returned from Rome.

Tuberculosis Sunday.—Every pastor in the city has been requested by the Director of Public Health and Charities to set aside February 21 as Tuberculosis Sunday, and to make on that day a special appeal on the subject of "Tuberculosis," calling attention to the International Tuberculosis Exhibit.

Physicians Guests of Druggists.—More than 400 druggists and physicians attended a banquet and meeting of the Retail Druggists' Association of Philadelphia, December 8, at which the subject of the ethical preparation of drugs was discussed, and a number of speeches were made by prominent members of both professions showing the need of education of the laity and the lack of proper education in medical and public schools and the improvemnt that would result from the education of the public as regards proprietary remedies.

Deaths in 1908.—According to the report of the director of public health, the city's mortality for 1908 was the lowest in its history. The ratio of death was only 17.16 per 1,000 of population, as compared with 18.30 per 1,000 in 1907. In only two previous years did the death rate go below 18 per 1,000, namely in 1905, when the rate was 17.25, and in 1902, when it was 17.67. The highest death rate in the history of the city was in 1872, when it reached 26.14 per 1,000, due to an epidemic of small-pox. The total number of deaths in the city in 1908 was 26,304, as compared with 27,462 in 1907, a decrease of 1,158. More than 60 per cent. of this decrease was in preventable diseases, as follows: Consumption, 4 per cent.; pneumonia, 4 per cent.; typhoid fever, 40 per cent.; diphtheria, 2 per cent.; meningitis, 80 per cent.; and influenza, 60 per cent. There was an increase of 81 per cent. in the deaths from scarlet fever, and of 257 per cent. in the deaths from measles in 1908, as compared with the previous year. The following were the principal causes of death: Tuberculosis, 3,518; pneumonia, 2,643; diphtheria, 498; scarlet fever, 181; typhoid fever, 583; influenza, 83; heart diseases, 2,473; enteritis, 1,945; pertussis, 225; cerebrospinal meningitis, 51; and measles, 232. The average death rate for the last ten years has been 18.27 per 1,000.

UTAH

Personal.—Dr. Thomas G. Odell, Murray, has been appointed physician of Salt Lake County.——Dr. Joseph S. Richards, Salt Lake City, who has been seriously ill for several weeks, has recovered and resumed practice.——Dr. Robert S. Joyce, Ogden, has been appointed division surgeon of the Southern Pacific Railway, vice Dr. George W. Perkins, deceased.

Hospital Notes.—A new hospital is to be completed and ready for occupancy at Ogden this year. The building will cost at least $75,000, and will be in charge of local practitioners.——A permit has been taken out for the heating plant and temporary orthopedic surgery ward for the Groves Latter Day Saints' Hospital, Salt Lake City, to cost $20,000.

Society Meetings.—At the annual meeting of the Utah County Medical Society, held at the State Mental Hospital, Provo, December 16, the following officers were elected: President, Dr. Walter T. Hasler, Lehi; vice-president, Dr. Daniel H. Calder, Provo; and secretary-treasurer, Dr. Frederic Clift, Provo (re-elected for the fifth successive year). Resolutions were adopted approving the movement to organize all existing national public health agencies into a single department under the control of a cabinet officer, and recommending steps to secure cooperation from Utah congressmen and members of the Utah State Legislature to secure uniform state and national public health laws, and to aid in the organization of a National Department of Public Health under the control of one responsible head.——At the annual meeting of the San Pete County Medical Society, held at Mount Pleasant, December 9, Dr. Charles E. West, Salina, was elected president; Dr. Burleigh C. Linebaugh, Moroni, vice-president; Dr. Margaret A. Freece, Salina, secretary-treasurer, and Dr. R. Garn Clark, Panguitch, delegate to the state medical society.——At the annual meeting of Salt Lake County Medical Society the following officers were elected: President, Dr. Augustus C. Behle; vice-president, Dr. William R. Tyndale; secretary, Dr. William Brown Ewing, and treasurer, Dr. Robert R. Hampton, all of Salt Lake City.

GENERAL NEWS AND COMMENT

Personal.—Dr. William J. Goodhue, resident physician at the leper settlement, Molokai, Hawaiian Islands, has been selected to represent the United States at the World's Leprosy Congress, which meets in Christiania, Norway, this year.——Dr. Carlos Finlay, Havana, has been appointed chief of the National Department of Sanitation of Cuba. This is a life appointment with a salary of $2,500 a year.——Dr. Newell K. Foster, Sacramento, secretary of the State Board of Health of California, has been elected president of the Board of Health Association of the Pacific Coast, which was recently organized at Portland.

Health of Hawaii.—The report of the president of the Board of Health of the Territory of Hawaii for the fiscal year ended June 30, shows that during the year there were 2,760 deaths, or 262 less than were reported during the previous fiscal year, the annual death rate for the year being 17.92. There were 430 deaths from respiratory diseases, 367 from digestive diseases, 211 from febrile diseases, and 115 from diarrheal diseases. During the year only one case of scarlet fever was reported; there were 36 cases of diphtheria with 12 deaths; no cases of variola; 11 of bubonic plague, of which 8 were verified; 278 cases of typhoid, with 124 deaths, and 351 deaths from tuberculosis. The report of the leper settlement

at Molokai shows that in July, 1907, there were 798 inmates. During the year 78 lepers were admitted, 73 died and 3 were released, leaving 791 at the settlement June 30, 1908. The new nursery for non-leprous babies was opened this fall. Children from this institution will be transferred after they have reached the age of 1 year, either to the Kapiolani Girls' Home or the Non-Leprous Boys' Home, Honolulu. At the beginning of the fiscal year there were 217 inmates at the Oahu Insane Asylum. During the year 82 were admitted, 79 died or were discharged, leaving 220 in the institution at the close of the fiscal year. During the year 13,293 rats were examined, 11 of which were found to be infected with plague.

Jefferson Class of Seventy-nine Reunion.—A reunion of the class of 1879 of Jefferson Medical College is planned for its thirtieth anniversary. It is contemplated to hold a reception and to occupy a separate table at the Alumni Banquet, and to continue the reunion during the meeting of the American Medical Association in Atlantic City, June 8, 9 and 10. The secretary of the class, Dr. William J. Middleton, Steelton, Pa., reports that he has the addresses of about 128 of the total of 1906 who graduated, and requests information regarding the following:

Armstrong, J. Stone, N. Y.
Blunden, Boyle N., Penna.
Bowcock, John W., W. Va.
Brown, Carlos M., Cal.
Cates, Charles H., Maine.
Crawford, George W., Penna.
Entler, George F., N. Y.
Forbee, William H., Ind.
Fowler, Warren H., N. Y.
Gardiner, Charles, N. Y.
Grady, William A., Minn.
Guerero, Alfonzo A., Central America.
Guzman, Virgillo, Central America.
Hale, John F., Ark.
Herron, Charles R., Fla.
Hice, Edward C., Penna.
Hickman, James W., Penna.
Holman, James A., Penna.
Hopkins, Abram C., N. C.
Hough, Thomas A., Penna.
Howard, Randolph, Ind.
Howell, Richard L., Penna.
Hoyt, Theodore E., Penna.
Jacob, Harry, Penna.
MacCord, George Thornton, Pittsburg.
MacCallister, Chas. H., Ind.
McClellan, R. Miller, Penna.
McClure, Frank E., Vt.
Nes, Henry, Penna.
Otway, David B. West Indies.
Page, Dudley L., Mass.
Paine, Wm. A., Penna.
Peairs, Elisha P., Penna.
Price, Allen D., Penna.
Pringle, William W., Ohio.
Rinehart, Williard E., Oregon.
Seaman, Dean, New York.
Shriner, Charles H., Penna.
Smith, Charles S., Ohio.
Smith, Harris K., Penna.
Sprowles, Isaac Newton, Penna.
Stopp, James T., Alabama.
Throop, George S., Penna.
Tomlinson, Thomas C., Delaware.
Torbert, Enos G., Penna.
Vega Francesco, Central America.
Wallen, Seely, New Jersey.
Ward, George Mason, Penna.
Waters, John, Pine Bluff, Arkansas.
Winslow, Byron, Penna.
Woodruff, George, New Hampshire.
Worsley, Edward A., Va.
Wright, J. Edward, Penna.
Zeiner, Levi S., Penn.

International Bureau of Public Health.—The International Bureau of Public Health was formally inaugurated at Paris Nov. 10, 1908, and the director and secretary were installed in office by the committee, composed of one representative from each of the countries which have agreed to support the newly created bureau. Dr. S. B. Grubbs of the P. H. and M.-H. Service was the United States delegate. The idea of having a central and international office for the purpose of gathering and distributing information concerning the graver epidemic diseases, especially cholera, plague and yellow fever, was first presented for consideration at the international sanitary convention of Paris, in 1903, although it had been advocated for some time previously by many sanitarians, notably the late Professor Proust of Paris. At the request of the convention of 1903, the French government undertook the task of presenting to the nations interested propositions regarding the organization of such a bureau. These propositions were submitted in a final form in August, 1907, and a conference was invited by the government of the French Republic, at the instance of the Italian government. This conference was held at Rome, Dec. 3, 1907, the delegates signing for the governments of Belgium, Brazil, Spain, the United States, the French republic, Great Britain and Ireland, Italy, the Netherlands, Portugal, Roumania, Russia, Switzerland and Egypt. The agreement may be summarized as follows:

The high contracting parties engage to found and maintain an international office of public hygiene, of which the seat shall be in Paris. It is operated under the authority and control of a committee formed of the delegates of the contracting governments. French is the official language of the office and its monthly bulletin shall be French, but the committee may decide that parts may be published in other languages.

The expenses necessary for the operation of the office, estimated at 150,000 francs per annum, are covered by the states signatory to the convention, the contributions of which are fixed according to the following categories: (1) Brazil, Spain, United States, Great Britan, British India, Italy, Russia, at the rate of 25 units; (2) at the rate of 20 units; (3) Belgium, Egypt, and Netherlands, 15 units; (4) Switzerland, 10 units; (5) 5 units; and (6) 3 units.

The men chosen for director and secretary are distinguished in their callings, are full of zeal for the work, and will have the earnest support of the French government, which has promised not only to recognize the bureau officially, but to give it permanent offices in the Department of Labor. It was decided that the position of director should not be restricted to medical men, as the diplomatic side of the duties will be quite as important as the scientific side. As is customary in practically all European countries, a liberal retirement privilege and pensions have been provided for the personnel of this bureau, so that the undivided efforts of their best years may be given to the work without fear for the future.

The office is under the authority and control of an international committee composed of technical representatives designated by the participating states at the rate of one representative for each state, but with a number of votes inversely proportioned to the number in the category to which it belongs as concerns its share in the expense of the office.

The committee meets periodically at least once a year, and the members of the committee receive mileage from the fund appropriated to the operation of the office and a fee for each of the sessions which they attend.

It is believed that the full exchange of ideas that will take place at the semiannual gathering of the governing committee, composed as it is of men of the highest authority and influence, will have a beneficial effect on the march of international sanitation, and that as a central clearing house of sanitary information the bureau will become of the highest importance, both in the quarantine and the internal sanitary administration of the various countries of the world. The foundations of the International Office of Public Hygiene have been laid as for an institution that is to be permanent. In organization it resembles the permanent International Postal Bureau and the Bureau of Weights and Measures, but in the field of sanitation it is original, being the result of long and persevering collaboration by men who believe that the greatest international publicity in sanitary matters is the first and most important step toward perfect sanitary control.

FOREIGN NEWS

Congress Program in Esperanto.—The program of the Eighth International Congress on Hydrology, Climatology, Geology and Physiotherapy, to be held in Algiers in April, has been published in Esperanto, in addition to the usual official languages.

Academy of Medicine Founded at Buenos Aires.—The authorities have decreed the organization of the official Academy of Medicine of the National University of Argentina. It is to consist of 25 members, with honorary and corresponding members as desired, and is to comprise three departments, biology, general medicine and surgery with gynecology and obstetrics.

Students' Number of the Paris Progrès Médical.—This important number of our French exchange contains 255 pages and supplies a fund of useful information not only for students and practitioners, but for all interested in medical education and practice, midwifery, dentistry and pharmacy in the French-speaking countries. One chapter describes the organization of medical instruction in France; another, the conditions for obtaining the medical degree, military service and exemption; another, medicine in the army, navy and colonies, and another organizations of and for medical students and practitioners, dentists, etc. Nearly a hundred pages are devoted to the medical institutions of Paris, including private educational and clinical establishments and training schools for nurses. The fourth part of the number is devoted to general professional information, laws, decrees, benefit and pension societies, syndicates, watering places and medical, dental, pharmaceutic and public health organizations, private and official. This number is far more complete than any of its predecessors; not the least interesting feature is the historical sketch and detailed description of many of the institutions, and the timely advice given to medical students and fledgling doctors on various professional subjects. The theses maintained at most of the different French-speaking medical schools are listed not only in France, but for Brussels, Ghent, Liége and Louvain in Belgium, Geneva and Lausanne and Bucharest. Particulars are also given for the medical schools at Jassy, Quebec and Montreal. The prizes offered by various institutions are also listed, with all the conditions for the competition.

The Medical Profession in the Recent Political Events in Turkey.—Remlinger of Constantinople states that medical men took a prominent part in the events which have resulted in the establishment of a constitutional government in Turkey. In a communication in the *Presse Médicale* he says that the Military Medical School at Constantinople has long had the reputation of being a focus of advanced ideas and that the list is a long one of students and physicians who have been exiled to remote regions or condemned to a hundred and one years in prison on some trivial excuse, but in reality

on account of their political activity. The recent amnesty provided pardon for all these political offenses, and it is estimated that not less than 500 physicians and medical students have been restored to freedom in consequence. A number of the physicians succeeded in escaping prosecution by flight to France and Egypt, and the Young Turk party numbered some of its leading spirits among these refugees. Chief in this group, he says, was Nazim Bey, who, under various disguises, has traveled all over the country during the last few years fostering the movement for reform. His return to Salonica, after the promulgation of the amnesty, was a triumphal ovation. The Union and Progress Committee, which is playing a leading part in the politics of the empire at present, includes several physicians whose names are known in science, Djemil Pacha, Riza Tewfik Bey and Essad Pacha. Remlinger adds that when the constitution was proclaimed, no one dared to take the initiative in its reception as a fact until the medical students headed a procession to the Sublime Porte, banners appearing as if by magic inscribed, "Science Rests on Liberty"; "The Health of the Nation is Bound up with Science," etc. He is proud of the fact, he says, that the regeneration of a great people owes so much to the medical profession.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 29, 1908.

Sudden Death After the Prophylactic Injection of Diphtheria Antitoxin

The remarkable series of cases of sudden death after injection of antitoxin recorded in THE JOURNAL during the present year were without parallel in Great Britain until the following case, which has just occurred. A girl, aged 18, had a sister suffering from diphtheria, and the physician in attendance advised the injection of antitoxin in order to avoid the risk of her catching the disease, from which she had previously suffered. When the antitoxin was injected she complained of smarting pain, and added that she was suffocating. She became worse, and in a few minutes fell from her chair and died. For several years she had suffered from asthma, and the doctor thought death was due to asphyxia from an acute attack of asthma. Dr. Collier of Oxford, ex-president of the British Medical Association, made a postmortem examination and found the lungs and cavities of the heart in such a condition as could only be brought about by sudden and extreme spasm, such as might be accounted for by an acute attack of asthma. In his opinion the injection of antitoxin started such an attack. He did not think that any one could have possibly anticipated such a result. As far as he knew no similar case had ever been recorded. In view of the great importance of the inquiry, he invited Dr. Dreyer, professor of pathology in the University of Oxford, to be present at the examination. The latter agreed with his conclusions. At the inquest which was held the jury returned a verdict that death was due to an acute attack of asthma started by an injection of diphtheria antitoxin which had been administered with proper care.

Oldest Member of the College of Surgeons

An interesting communication has been received by the Royal College of Surgeons from its oldest member, Surgeon-Major Hinton, who resides in Glenelg, South Australia. "I am," he writes, "in perfect health, walking for pleasure 5 miles or more a day." In 1835 he became a member of the college, and in 1838 he joined the Bengal Medical Staff, retiring from service in 1868. Since his retirement he has lived in Australia, the climate of which he considers conducive to longevity. He is now 95 and expresses the hope that he will live to attain the age 100.

Poisoning by Ferro-Silicon Gases

The emigrant steamship *Ashton*, bound for America, arrived from Antwerp at Grimsby with five dead passengers, Russian Jews. They were the only passengers carried and were all in good health when the vessel left Antwerp December 12. On the morning of December 13, the steward found four of them lying dead in their berths between-decks, while the fifth died within twenty-four hours. The Grimsby health officers were much puzzled as to the cause of death. The passengers' berths were between-decks directly above the forehold, with which there was a communication by a hatchway. The cargo included 9 tons of ferro-silicon. At the inquest the master of the ship declared that he had never heard of the substance before, and did not know that it gave off poisonous gases. He had never seen the notice issued by the board of trade to mariners drawing attention to its dangerous properties and pointing out that 4 deaths had already occurred from it. The shipping agent gave evidence that the company had forbade shipping ferro-silicon in any of their steamers. Its shipment in the present case, he declared, was contrary to their instructions. The verdict of the jury exonerated the ship's officers from all blame.

Reform of Coroner's Inquests

The present system of coroner's inquests is, like many other parts of the British constitution, a relic of the feudal system which the conservatism of the English permits to survive until it has become a glaring anomaly in modern civilization. In all cases of death from violence, even when there is no question of crime or responsibility of any person, and in all cases of death from natural causes without a physician being in attendance, an inquest must be held. Last year 7,025 inquests were held in London (exclusive of the down-town district) at a cost of $150,000, and verdicts of "death from natural causes" were returned in 3,375. Yet in each of these a full jury had to be empanelled and all the cumbrous machinery of the coroner's court set in motion. Reform of coroner's courts is to be the subject of an inquiry by a departmental committee of the home office, and which is approved by the London County Council, the Medicolegal Society and many experienced coroners. The London County Council recommends the appointment of one or more salaried medical investigators for each London district, to inquire into all uncertified deaths, assisted by responsible inquiry officers, and to make necropsies when necessary and report to the coroners, who will decide whether or not an inquest is necessary. It is also proposed to reduce the number of jurors by one-half—that is, the number is to be not less than 6 or more than 11.

Treatment of Leprosy

The secretary of state for the colonies and the government of British Guiana have arranged for Professor Deycke, late directory of the Medical Military School at Constantinople, to test the Nastine treatment for leprosy at the Colony Leper Asylum at Mahaica, British Guiana. If the trial is successful the British government may have the method adopted in other British colonies.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 24, 1908.

Has a Physician the Right to Refuse to Visit a Patient?

In consequence of the difficulty experienced by Dr. Babon of Argenton in obtaining payment from a certain patient for services rendered, he wrote to the other physicians in the town informing them of the patient's refusal to settle the account. The patient thereupon brought suit against Dr. Babon for $1,000 damages, because the doctor not only refused to give medical care to the patient and his family, but also prevented other physicians of Argenton from giving it. The court decided against the plaintiff on the grounds that Dr. Babon's letter to his colleagues contained nothing defamatory, and that, while the law of 1892 provides, in a general way, that every physician must respond to the requisitions of justice, a physician is absolutely free to refuse his services to any person whatsoever.

The case is different, however, if a physician, having promised to visit a patient, fails to keep his appointment. In this case there would be ground for action for damages against him. Similarly, the physician who, after beginning to treat a patient, abandons him without having given the necessary attention, is legally responsible for his neglect unless this was necessitated by circumstances over which he had no control.

Exciting Incidents at the Examination for "Admissibility to the Agrégation"

The opposition to the proposed diploma for advanced studies, the *certificat d'études médicales supérieures*, mentioned in my previous letter, was so pronounced that the project was abandoned and another diploma proposed in its place, entitling the holder to compete for the subordinate chairs in the medical faculties, the post of *professeur agrégé*. The same objections apply, however, to this as to the other, and a referendum vote taken by the Association of former internes of the Paris hospitals resulted in 200 votes against the measure, with only 10 in its favor. The chief objection is that the

candidates will have to leave their regular work, their nucleus of a clientèle, to spend two or three months a year in attendance on the competitive examinations as they are held one year at Paris, another at Lyons, another at Toulouse, and so on. Another objection is that the examinations are merely memory tests and on theoretical subjects which the candidates learned in their student days, but have had time to forget during the interval of six or ten years or more since their graduation.

The first competitive examination under this new arrangement was held December 21, but it provoked a riotous demonstration, in which not only the students, but a very large number of doctors participated. The disturbances were so serious that the president of the examining board, Professor Bouchard, sent for two detachments of the military, who were stationed around the building, something which has never before happened, at least since the republic has been established. The government is now to investigate the whole question. On the other hand, the medical organization of the Seine province has entered a formal protest against the competence of the examining board provided, the *conseil supérieur de l'instruction publique*, as it is composed mostly of professors from non-medical schools, while the few medical men on the board, the leading spirits in the medical hierarchy, are equally incompetent, as their practice among the wealthy and cosmopolitan population of Paris gives them no insight into the medical requirements of the great mass of the population, the middle and working classes and the peasants. The protest concludes by urging the authorities to invite the cooperation of medical organizations in reforming the methods of medical instruction and sanitary and hygienic regulations.

Certificate of Radiography

Some months ago, the Academy of Sciences appointed a committee to investigate the question whether or not the practice of radiography ought to be restricted exclusively to physicians. Certain members of the committee are said to favor the creation of a new diploma, that of radiography, to be given to students of medicine at the end of their preparatory year for the P. C. N. examination (physics, chemistry and natural sciences).

Oversight by Medical Syndicates of Offers of Vacant Medical Situations

Many small municipalities post in the medical schools offers of vacant medical situations, with deluding promises. There is now a movement to have such offers passed on by the local medical organizations before they are allowed to be posted in the schools, a desirable innovation, since it would furnish accurate information and prevent imposing on over-credulous young practitioners.

For and Against Absinthe

The Senate is considering a bill to prohibit the manufacture and sale of absinthe which is endorsed by more than a hundred senators of all political parties. Sixteen of the eighteen members of the committee to which the bill was referred are also in favor of the measure. The members of the Senate were not a little surprised to receive recently a voluminous report prepared by the state's attorney, the *procureur*, at Pontarlier, the center of the absinthe-manufacturing district, stating that absinthe of good quality is a harmless if not a beneficial beverage, and that the evils ascribed to it are due solely to the adulterations. This communication has elicited an energetic protest from Dr. Lédoux, physician of the hospital at Besançon, capital of the department in which Pontarlier is situated. He shows by statistics the lamentable influence of absinthe, "good" or bad, on the progress of tuberculosis, of depopulation and of insanity.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 22, 1908.

Chairs of Physiology and Hygiene in Berlin

My report that Flügge, from Breslau, would probably be considered as a successor of Rubner has been confirmed. Flügge has received the call. Meanwhile, a decision has not yet been reached, as the conditions have become somewhat complicated. Rubner wishes to retain the new institute for hygiene, lately built under his directions, as the institute for physiology, and have the physiologic institute previously used, which was built under the direction of Du Bois-Reymond, converted into the institute for hygiene. But all these changes cost money, and therefore the final decision must be made by the minister of finance; until this is done the appointments to the chairs of physiology and hygiene are still uncertain.

Fake Honorary Memberships

For a year or two there has existed in Palermo, under the name of the Physico-Chemical Academy, a fraudulent institution which confers honorary membership on foreign scientists in return for a certain fee for the preparation of the diplomas and medals. In their craze for distinctions a large number of German medical notabilities have been victimized by this swindle, and, in spite of every warning, even certain prominent professors are now repenting for their vanity and credulity. Lately an official notice regarding the institution has been published by the Italian general consulate. According to this statement the academy with the high sounding name consists of "a motley company, which has assumed this title in order to flatter the vanity of fools." The *Deutsche medizinische Wochenschrift*, which republishes this notice, justly comments that even this announcement will not avail, as experience has shown that there always will be found scientists of reputation who will gladly pay for membership in this society.[1]

The Cholera in Russia

After a transient subsidence, cholera has again flared up in St. Petersburg. This is not surprising, as we read the following statement regarding the condition of the drinking water in St. Petersburg: "The water taken from the Neva in the immediate neighborhood of the city is not filtered at all in the parts of the city on the north shore of the Neva and only partially in the rest of the city. The place from which the water is taken lies directly below large factories and hospitals which empty their entire sewage into the river without any sort of disinfection. Most of the filters have not been cleaned for fifteen years, and the filtering layer is permeated from top to bottom with foul-smelling organic slime. Samples taken from different parts of the filtering layer, as also samples of the freshly filtered water, show the presence of cholera germs, although the Neva has been frozen over for a long time. A thorough disinfection of all the water mains is now contemplated.

Robert Koch Foundation for the Campaign Against Tuberculosis

This foundation, of which I have previously spoken, has lately received an important contribution from Frau vom Rath, a lady who has already made large donations for the care of the sick, and now has given the foundation, 125,000 marks ($30,000). The gift is to be made a special fund for research on the relations between nutrition and tuberculosis. The executive board of the foundation has been recently organized. It consists of Robert Koch, the president of the imperial board of health, the director of the institute for infectious diseases, the first court physician of the emperor, also B. Fränkel, the well-known authority on tuberculosis, von Renvers, physician in ordinary to the imperial chancellor, Mugdan, member of the reichstag, von Studt, former minister of state, privy councilor Schmidt, Frau vom Rath and Professor Schwalbe, the editor of the *Deutsche medizinische Wochenschrift*.

Drunkards Among the Habitual Criminals in the Prussian Penitentiaries

Recently published statistics again show that the habitual criminals come to a large extent from the ranks of the habitual drunkards. Between 1902 and 1905 there were in all 12,534 convicts in the Prussian penitentiaries, and of these 3,074, or 25 per cent., were habitual drunkards. It is further of interest that according to the annual report of a building trade insurance society for the district of Zürich, accidents occur most frequently on Monday, that is, the day following the more abundant consumption of alcohol on Sunday. According to these statistics, the accidents reported on Monday exceed those of all the other days of the week by 42 per cent.

The Conflict Between Physicians and the Life Insurance Societies

For some time German physicians have been treating with the life insurance societies with reference to raising the fees

1. It was written up in THE JOURNAL, June 29, 1907, page 2196, as certain physicians in America were also being informed that they had been elected honorary members.—EDITOR.

for examinations. They ask a fee of 5 marks ($1.25) for the brief report rendered by the family physician, and 10 or 20 marks ($2.50 or $5) for the more extensive report furnished by the examiner for the company, varying according to the amount of the insurance. As the life insurance companies have refused these and other stipulations, the Leipsic League has proclaimed a strike of physicians against the life insurance companies. On this account physicians for the present are making no examinations for the life insurance companies. It is to be hoped that the quarrel will soon be settled, as by it no small injury is being done not merely to the life insurance companies, but to physicians and to the public as well.

Pharmacology

HOWELL'S MERCOL

Reid Hunt, M.D., and Atherton Seidell, Ph.D.

Division of Pharmacology, Hygienic Laboratory, Public Health and Marine-Hospital Service

WASHINGTON, D. C.

In response to a request of the secretary of the Council on Pharmacy and Chemistry, we have recently investigated a preparation known as Howell's Mercol. This is manufactured by H. B. Howell & Co., Ltd., New Orleans, and it is claimed to be a 1 per cent. solution of mercuric iodid in a non-irritating neutral menstruum, and is recommended for hypodermic use in the treatment of syphilis. A physician who gave the preparation a trial writes to the secretary of the Council as follows:

"I gave the preparation a trial—hypodermic—and found that it was absolutely painless, but immediately grew skeptical as to its strength on account of the absence of any of the physiologic manifestations of mercury, and, when given in larger doses, also failure in therapeutic results."

It seemed desirable, therefore, to determine if mercuric iodid is actually present in this preparation. The examination of three different samples, one of which had been obtained for us directly from the manufacturer was as follows:

The preparation is a yellowish, oily liquid with a slight bluish fluorescence. The specific gravity at a temperature of 20 C. was found to be 0.859; the boiling point was above 360 C. A determination of the saponification number by digestion at a temperature of 100 C., with standard alcoholic potassium hydroxid solution in a pressure bottle, gave only a trace of saponifiable fats. The "neutral menstruum," therefore, consists of mineral oil; probably commercial liquid petrolatum.

The solubility of mercuric iodid in petrolatum at 25 C. is quoted on page 199 of Seidell's "Solubilities of Inorganic and Organic Substances" as being 0.025 gm. HgI_2 per 100 gms. petrolatum ("vaselin"). It appears, therefore, that the claim for a 1 per cent. solution of mercuric iodid in a solvent composed only of mineral oil as found in the present sample is open to suspicion.

The first test which suggested itself for the detection of mercuric iodid in the sample of Mercol was simply to dissolve the preparation in a suitable solvent such as ether, chloroform, or mixtures of these with alcohol, etc., and pass in hydrogen sulphid. No precipitate being obtained in any case, attempts were made to extract the mercury salt by violently shaking the sample with strong potassium iodid solution. The resulting aqueous layer failed however to yield mercuric sulphid on passing hydrogen sulphid gas through it. These tests were also applied without success to solutions of mercuric iodid in liquid petrolatum prepared in the laboratory. The presence of the mercuric iodid in at least one of these samples, namely, that prepared by heating a mixture of the red mercuric iodid and petrolatum on the steam bath for some hours and decanting the clear hot solution, was assured, since on cooling the separate red iodid was plainly visible. Furthermore, rather large amounts of mercuric iodid dissolved in petrolatum by heating, were not precipitated by hydrogen sulphid. These experiments indicated that petrolatum when present even in relatively small amounts interferes with the precipitation of mercury as the sulphid.

After numerous experiments on Mercol and mixtures of mercuric iodid and liquid petrolatum prepared in the laboratory, two satisfactory tests for the detection of the mercuric iodid were devised.

The first of these was based on the observation that a mixture of red mercuric iodid and liquid petrolatum when heated to the boiling point for several minutes in an inclined test tube yields a yellow and red deposit of mercury iodid in the upper part of the tube while the petrolatum condenses and flows back to the hot liquid below. The identity of the yellow and red deposit was established as follows: The larger part of the petrolatum was withdrawn with a pipette and the remainder removed with the aid of chloroform. A portion of the yellow deposit was then dissolved in alcohol and the solution mixed with chloroform and shaken with dilute sulphuric acid containing a few drops of a 1 per cent. sodium nitrite solution. The liberated iodin imparted the characteristic pink color to the chloroform layer. The remainder of the deposit was then dissolved in potassium iodid solution and treated with hydrogen sulphid when black mercuric sulphid separated. In order to determine roughly the limit of delicacy of this test, mixtures of mercuric iodid and liquid petrolatum were prepared and boiled in test tubes as described above. It was found that 0.0008 gm. HgI_2 in 5 gm. liquid petrolatum (=0.016 per cent. HgI_2) yielded a faint although perfectly distinct yellow deposit. It is therefore safe to assume that with 3 to 5 gm. of sample this test will distinctly show as little as 0.03 per cent. mercuric iodid. A solution of mercuric iodid in liquid petrolatum prepared by digesting for some time on the steam bath and decanting yielded the yellow deposit when a few cubic centimeters were treated as above described. A solution of mercuric iodid prepared by heating a mixture of the salt and liquid petrolatum over the flame until a clear liquid was obtained and then cooling and filtering from the separated salt gave no yellow deposit when boiled in a test tube as described. This indicates that at the ordinary temperature petrolatum holds less than 0.03 per cent. of mercuric iodid in solution. Of several samples of Mercol none gave even a trace of a yellow deposit when examined very carefully by this test.

The other test used for the examination of Mercol depends on the colorimetric detection of the iodin. For this purpose the sample is mixed with somewhat more than an equal volume of chloroform and shaken with dilute sulphuric acid to which a few drops of 1 per cent. sodium nitrite solution are added. Under these conditions the liberated iodin imparts the characteristic pink color to the chloroform layer. The limit of delicacy of this test was found to be less than 0.01 per cent. The hot solution of mercuric iodid in liquid petrolatum digested for some time on the steam bath responded immediately to this test. The cold filtered solution did not, neither did any of the samples of Mercol which we examined. It would therefore appear that the amount, if any, of mercuric iodid in Mercol is less than 0.01 per cent.

These experiments indicate that although the manufacturers of Mercol may have used mercuric iodid in its preparation, they have not succeeded in obtaining a 1 per cent. solution of this compound in their "non-irritating neutral menstruum." It is furthermore evident that the samples examined as above outlined contain none, or at most, only traces of biniodid of mercury.

Comments on the above would seem superfluous. To state that a manufacturer is grossly careless who claims to have an efficient preparation of what is almost a specific for one of the most terrible diseases known, but which contains practically none of the active ingredient, is expressing it very mildly. The following statements contained in the circular accompanying the bottles of Mercol are interesting:

"This is an ethical preparation, and, as such, the physician should have no hesitancy in using it in his practice. We desire to restrict the use of Howell's Mercol to the physician. Therefore, we do not go into minute details concerning its composition or therapeutic worth."

"The production of Howell's Mercol requires special apparatus, considerable time and some chemical knowledge. In fact, it is an extremely delicate chemical manipulation. While we do not claim to be overwise, yet, in this instance, we have done well. In view of the fact that this preparation is used hypodermically, we suggest that the physician safeguard himself and patient by using the original. Substitutes might prove dangerous."

Considering the extremely low cost of this preparation, the profits are certainly attractive, selling as it does at $12.00 per pound, or $1.00 per ounce.

THE INTERNATIONAL INSTITUTE FOR THE TREATMENT OF TUBERCULOSIS

The Results of an Investigation of Sixty-two Cases "Treated" by This Fake Concern

While the medical profession knows that the innumerable "consumption cures" that are being exploited, are all fakes, yet it is seldom possible to learn the inner workings of such concerns. This fact is well known by the promoters of "cures" in general, and it forms the bulwark of their commercial success. For this reason the following data which we have obtained regarding the "International Institute for the Treatment of Tuberculosis" is interesting, both intrinsically and because it is typical of many similar concerns.

When the methods and personnel of the "International Institute" were discussed in THE JOURNAL of December 12, it was stated that the cases of patients "treated" by the O. E. Miller method were under investigation. The results which have come to hand, in addition to demonstrating the, not unexpected, worthlessness of the "cure," have brought to light the astounding heartlessness of which men engaged in this line of business are capable. There are cases, no doubt, of ignorant and untutored men who have put forth a fake remedy in which they themselves had faith. Such obsessions are possible though not common: just as in an earlier day there were magicians who believed in their own magic. Such individuals deserve pity rather than contempt. No such excuse, however, can be put forward in defense of the International Institute for the Treatment of Tuberculosis and those financially interested in it. The damning facts which we are about to give must, in the nature of the case, be known to the exploiters of the O. E. Miller "treatment" and doubtless in some cases on which we lack information the knowledge possessed by them but increases the grewsome obituary list which we present.

THE DUNNING EPISODE

Some light is thrown on one of the earlier episodes in Miller's attempt to get his "cure" before the public, by the following communication:

DUNNING, ILL., DEC. 22, 1908.

To the Editor:—I notice in THE JOURNAL, Dec. 12, 1908, you have given your readers some timely facts concerning O. E. Miller and his, so-called, tuberculosis cure. Permit me to add my share to the general fund of facts. In October 1907, Miller, accompanied by a Chicago physician, came to the Cook County Hospital for Consumptives at Dunning. Miller said he had a cure for pulmonary tuberculosis, and that if some of our patients would be willing to try his treatment, he would care for them free of charge. He explained that the physician who accompanied him was to be with them and administer the treatment. The matter was presented to a group of patients and ten of them accepting his offer, were taken by Miller to the Lincoln Park Hospital, Chicago, where they were "treated." One other patient joined them later. The result of the "treatment" follows:

(1.) C. Kearney, dead.
(2.) C. Peterson, dead.
(3.) P. Carr, dead.
(4.) C. Ryan, dead.
(5.) L. Goodman, dead.
(6.) —— Olander, dead.
(7.) R. Coudek, unaccounted for.
(8.) M. J. Cronin, unaccounted for.
(9.) A. Daum, and (10) A. Martin, confined to bed by terminal tuberculosis, in Cook County Hospital for Consumptives.
(11.) R. Kacin, advanced tuberculosis, an ambulatory case.

Mr. Kacin who was with the men all the time has made a statement under affidavit, which I include with this. If in your judgment these facts will interest your readers, I shall be glad to have them published.

ERNEST S. MOORE,
Physician in Charge, C.C.H.C.

The letter of Mr. Kacin's referred to is too long for publication, but the essential facts are these: The patients were at the Lincoln Park Hospital for about three months and two of them—Kearney and Peterson—died there. One of the number—Carr—was then transferred to Magnolia Springs, Ala., and the remainder of the patients followed later. Carr died a week after his arrival and Ryan succumbed in four weeks. In closing, Mr. Kacin says: "I am familiar with the whereabouts of but three of the eleven men who left the hospital in October, 1907. . . . Speaking for myself, I am now in worse shape than when I left here."

And this is a group of patients which the agents for the International Institute have referred to as wonderful cures!

THE CHICAGO "SANITARIUM"

Though Miller's agents when soliciting funds for the establishment of "sanitaria" have apparently conveyed the impression that the "Institute" has a "large sanitarium in Chicago," the facts are the concern has no place of its own. Since last July the institute's patients have been given "treatment" at the Chicago Union Hospital.

The physician originally in charge of Miller's patients was a Dr. J. G. Sinclair of Chicago. Sinclair and Miller seem to have had a disagreement in September, and the former withdrew from the International Institute and has since conducted a "consumption cure" of his own, using, so his agents claim, Miller's "remarkable eliminative treatment." Of this more later.

MILLER'S PATIENTS TREATED IN CHICAGO

Since Sinclair left the "institute," Dr. E. A. Moulton—who, according to the official stationery is "house physician"—seems to have been in charge; at least his name is signed to most of the death certificates.

With the cooperation of the Chicago Health Department, we were able to obtain a list of the patients who have been received at the Chicago Union Hospital to undergo the Miller "treatment." We have followed up the history of these patients and the information received up to the time of going to press is presented in tabular form. The names of the patients and the towns (usually small) from which they came, are purposely omitted to shield the unfortunate victims from a somewhat unenviable publicity.

WHAT THE INSTITUTE HAS ACCOMPLISHED

Case.	From.	Admit. 1908.	Condition.
1	Ill.	July 17	Dead.
2	Ill	July 20	No information.
3	Ohio	July 31	Dead.
4	Ill.	Aug. 2	Dead.
5	Ill.	Aug. 2	Dead.
6	Ind.	Aug. 4	Dead.
7	Ohio	Aug. 7	Dead.
8	Ill.	Aug. 9	Dead.
9	Wis.	Aug. 9	No information.
10	Penn.	Aug. 10	No information.
11	Ill.	Aug. 12	Dead.
12	Ind.	Aug. 17	Dead.
13	Ill.	Aug. 17	"Approaching the end."
14	Ohio	Aug. 18	No information.
15	Ill.	Aug. 27	Dead.
16	Ill.	Aug. 29	"In no sense cured."
17	Ill.	Sept. 2	No information.
18	Ohio	Sept. 10	Dead.
19	Ill.	Sept. 15	No information.
20	Col.	Sept. 16	No information.
21	Tenn.	Sept. 16	No information.
22	Ill.	Sept. 14	"Still has hemorrages; decreased weight."
23	Ill.	Sept. 19	"Lying weak and aphonic."
24	Ill.	Sept. 19	Dead.
25	Ill.	Sept. 19	Dead.
26	Iowa	Sept. 24	"Still living; out in Arizona."
27	Ohio	Sept. 24	"Will doubtless die within a few weeks."
28	Wis.	Sept. 26	"Is in last stages."
29	Mich.	Sept. 26	Dead.
30	Ind.	Oct. 4	Dead.
31	Ill.	Oct. 4	Dead.
32	Ill.	Oct. 5	Dead.
33	Ohio	Oct. 16	Dead.
34	Ill.	Oct. 25	Dead.
35	Ill.	Oct. 26	No information.
36	Ill.	Oct. 26	Dead.
37	Ill.	Oct. 26	"Little if any change."
38	Ill.	Oct. 27	"Failing rapidly."
39	Ill.	Nov. 4	Dead.
40	Tenn.	Nov. 4	"Is no better."
41	Ill.	Nov. 9	Dead.
42	Vt.	Nov. 12	No information.
43	Ill.	Nov. 14	No information.
44	Ill.	Nov. 15	"Death looked for any time."
45	Ill.	Nov. 17	Dead.
46	Ind.	Nov. 21	Dead.
47	Ill.	Nov. 24	No information.
48	Kas.	Nov. 24	No information.
49	Ind.	Nov. 28	Dead.
50	Texas	Dec. 12	No information.
51	Ill.	Dec. 14	No information.

THE CASES NOT SELECTED

These cases, it should be remembered, are in no sense selected. They represent the official record of the Institute's roster, from July 17, 1908, to Dec. 14, 1908. The table gives, in the briefest possible way, the history of fifty-one consecutives patients subject to the O. E. Miller "treatment" for tuberculosis. Yet Miller and his associates have the blatant effrontery to publish broadcast the statement:

"Of all cases treated . . . we have effected permanent cures of over 80 per cent. including all complications."

Tables and statistics are generally dry and uninteresting, but we feel that the tabular statement given above speaks more eloquently than any sermon of "man's inhumanity to man." Here we have a list of 51 individuals suffering from tuberculosis who have been subjected to the Miller "treatment" at the International Institute and of 36 of whom we were able to obtain definite information. Of the 36, no fewer than 25 are dead; of the 11 living, 4 may be said to be in dying condition and the others are "weak," "aphonic," "very low," etc.; as the case may be. It is possible, yes probable, that of the 15 patients about whom we have no information the same proportion are either dead or dying. In any event we have positive information regarding 45 patients out of the 11 Dunning and 51 other cases investigated. Of the 45 no fewer than 31 are dead and 14 are in what may be called the terminal stage of the disease, leaving 17 patients unaccounted for.

What the "treatment" actually seems to accomplish is to hasten the dissolution of the unfortunate victim taking it. As the reports began coming in regarding the cases under investigation, it was common to find such statements as: "I believe the 'treatment' marked the beginning of his rapid decline," or "her decline was rapid afterward." This indicates that the "cure" which has been foisted on the public by a man whose only claim to medical knowledge is that he was once an advertising quack in the "rupture cure" business, is not only worthless but dangerous.

THE HARTLAND "ANNEX"

In his advertising matter Miller speaks of "our branch sanitarium in Wisconsin." This "sanitarium" was originally known as the Gray Gables Hotel, and is situated about two miles southwest of Hartland in Waukesha County, Wisconsin. The hotel, if we are correctly informed, is the property of Dr. Milton Rice, a homeopathic physician of Milwaukee, and Dr. Rice is the individual who acts as physician for the "sanitarium," spending part of his time there and signing the death certificates when necessary.

SINCLAIR'S METHODS

We have already spoken of the connection which Dr. J. G. Sinclair of Chicago had with the International Institute. The methods which he employs to secure patients for his modification of Miller's "consumption cure" are set forth in a letter we have received from a Rockford (Ill.) physician. One of this physician's patients, a widow, was called on many times by Sinclair's agent, but the woman told him that she was not interested in their cure, and besides she did not have the necessary $350. It was recommended that she mortgage her home, and when she remarked that it was already mortgaged, the agent offered to secure a second mortgage, which she refused.

An old woman of Rockford "who makes a living by selling soap from house to house," was employed "to furnish the names and addresses of people afflicted with tuberculosis, and she was to receive $10 for each case that she would induce to take the treatment." Our correspondent adds: "I have good reason to believe that very few cases in Rockford escaped solicitation."

Sinclair was successful in getting one Rockford patient. According to our correspondent, "they got $100 down . . . and tied up $250 in such a way that he [the patient's husband] despairs of having it returned." The patient grew progressively worse under "treatment" and returned home. She was to go back to Chicago just after Christmas for further "treatment," but she died on the afternoon of Christmas Day.

PHYSICIANS AS AIDS

From a medical standpoint the disgraceful and disheartening part of it all is the fact that men with the right to sign M.D. after their names will have anything to do with such concerns as this. For without the cooperation of physicians, such cruel fakes as these "consumption cures" would be robbed of half their potentiality for harm. On the stationery of the International Institute we find the names of seven physicians, some of whom, at least, lay claim to reputability.

The lawyer, an ex-senator of the United States, whose name appeared on the stationery as general counsel, and to whom we referred in our former article, was evidently an innocent victim—not the first—of Miller's "philanthropy." This lawyer wrote us that he believed the concern to be composed of reputable physicians and to be conducted in the interests of charity, and so consented to give his time and services without remuneration, but that after reading our article exposing Miller and his methods, he immediately demanded that his name be removed from all their literature. He has, he says, ceased to be connected with the concern.

CONCLUSIONS

Such, then, are the methods of one of the most heartless and cruel of the innumerable "consumption cure" fakes. What such methods mean is fairly apparent from the death roll which we have published; but that is not all. It is fairly well proved and generally accepted that there is no drug "cure" for tuberculosis, and that fresh air, rest and nourishing but easily assimilated food give the only hope of recovery. The average patient with tuberculosis is not favorably inclined toward the fresh air treatment because it is of necessity slow, and there is usually connected with it certain little inconveniences which are resented. This and the well known optimistic attitude toward any new or *bizarre* treatment which is one of the symptoms of the disease, make the tuberculous an easy prey of the "cure" sharks. It is not hard to understand what happens when a plausible agent calls and tells of the wonderful, and practically universal, cures that the "treatment" which he represents has effected. The "fresh air treatment" is not necessary—even harmful, says Miller's pamphlet—and a four to twelve week "treatment" will bring about the much desired cure. The patient is told that the "treatment" is given under Miller's directions by registered physicians in Chicago—and here, unfortunately, the agents tell the truth.

It is then that the victim, even though warned by his regular physician, parts with the $250 or more for the "treatment" which is to make him a well man. He is further mulcted of $25 a week for "hospital expenses," and, though it seems unbelievable, the patient is kept at the hospital, at least in some cases, until within a few hours of dissolution. Thus is the toll of blood exacted to the uttermost, and thus are those who make a business of trading on the helplessness and ignorance of the sick financially recompensed for their efforts.

Correspondence

Esperanto as an International Language

To the Editor:—Dr. Talmey's letter on the alleged defects of Esperanto, in THE JOURNAL, January 9, page 148, demands—not for Esperantists, but for non-Esperantist physicians to whom appeal for an international language is being made—a consideration of his specific criticisms.

The value of Dr. Talmey's first criticism can be estimated by the fact that the "roofed" letters seem to have proved no impediment to THE JOURNAL'S printing his communication as written. I learn that any modern printing office can add the necessary Esperanto equipment for $2. Besides, there is the permissible substitution of ch for ĉ, sh for ŝ, etc., which is widely used, Dr. Talmey's opinions on esthetics notwithstanding.

His second criticism is also based on a matter of taste. Objections can be raised to Ho on similar grounds. He cites phrases with a concurrence of sibilants. As well condemn English on account of the old schoolboy catch: "Chichester Church stands in Chichester churchyard." Also, Dr. Talmey's self-appointment as *arbiter elegantiarum* lacks confirmation.

His third and sixth criticisms are nullified by the fact that one can not compel any man to write or speak any language in any particular way. President Roosevelt recently found that out. Man will speak as he chooses, subject to the necessity for keeping his departures from custom within the limits

of intelligibility, under penalty of finding his speech useless. Nearly all words in Esperanto are regularly formed. All can and should be; for the rules for word-formation are precise, unequivocal, and unvarying, and the instance is yet to be found in which they can not be applied. The few irregular formations that have been used by inadvertence, and have thus crept into the dictionaries, will certainly be replaced by correctly formed words in due course. Take, for instance, this one cited: *Broso* has crept in for "a brush." Now, *bros* signifies the root idea of the act of brushing, *o* the termination of a noun, *il* the instrument by which any act is performed; consequently to any Esperantist *bros-il-o* can signify nothing but the instrument with which the act of brushing is performed, no matter what the dictionaries or other "authorities" may give. This reasoning applies to all the words criticized and to the very few other existing wrong formations. It further justifies the Esperantist in ignoring the plural in adjectives, as well as the accusative in both adjectives and nouns, provided he arranges his words so as to avoid ambiguity. Many good Esperantists, for instance, now say without fear of causing misunderstanding: *Alportu al mi freŝa pansajoj*, instead of *freŝajn pansajojn*. In fact, the really useful changes proposed are in line with the natural evolution of Esperanto, and it depends solely on usage (which in linguistic matters makes "authority," not vice versa) whether they shall gradually prevail. But there is no need for a new bureaucratic organization, unless to provide its promoters with a band-wagon of their own.

Against the fourth criticism I submit the following from Dr. Talmey's own text-book on Esperanto: "The ingenious inventor of the language has not created these root words anew, but has taken them entirely from the natural languages. Herein he was guided by the principle of internationality; that is, he appropriated as a foundation of the vocabulary, first, those words which are already international, as all technical and scientific terms and many other words. He further selected such words which (*sic*) are common to the greatest number of living languages."

To the fifth criticism of Dr. Talmey I again oppose Talmey himself (*ibid*): "The clearness of the Esperanto style, the immense richness of its vocabulary, and the extreme facility of learning Esperanto are due to the extensive possibility of forming new words from given roots. The number of these roots is about 2,600." He adds that "by affixes and by combining words an unlimited vocabulary can be obtained." Moreover, addition to the roots is continually going on. As to idioms, any language, to become international, must be capable of expressing any peculiar mode of thought. Where, for example, an English-speaking person might say *li eldiris* (or *ekparolis*) *krion* for "he uttered a cry," a Frenchman might say *li puŝis krion*, because he might think "*il poussa un cri*." Any Esperantist who should fail to understand the Frenchman's *puŝis krion* would be lacking, not in knowledge of Esperanto, but in common intelligence, and that no international language professes to give. Moreover, the same condition would occur equally with any other international language.

We have Dr. Talmey's own assertion that he is an "expert in this language." That is as may be. Certainly he has written a manual of Esperanto. I paid $1 for it two years ago, to look into the language. It misled me into regarding the new language as just what Dr. Talmey now asserts it to be, namely, illogical, difficult, and impracticable. I therefore dropped it. Yet when, in 1908, circumstances compelled me to take it up, I acquired facility in it in three weeks, from a primer and vocabulary which together cost about twenty-five cents. The New York Esperanto Society, which, according to Dr. Talmey, "unanimously" adopted Ilo last November and changed its name accordingly, was at the time simply a remnant consisting of some fifteen, most of the members having retired in disgust, not as the Ilôists would have us believe, with Esperanto, but with the vagaries of the bureaucratic reformers who persisted in turning practical meetings into fruitless theoretical discussions on proposed changes. They have formed a new and flourishing society and are more alive than ever. (Moreover, the "unanimous" vote, I learn, was given by only five, three voting for the change and two against it.)

Dr. Talmey, in boasting of the support of the "great scholars of international renown" composing the Committee of the Delegation for the Adoption of an International Language, omits to tell us that the president of that committee, Prof. Wilhelm Förster, of Berlin, resigned because, as he says, "the commission, overstepping the task assigned to it by the committee, and contrary to the will of eminent members of the committee, displayed towards the body of the Esperantist movement a captious and overbearing spirit and itself attempted to disseminate a reformed tongue." Three other members—Professors Wilhelm Ostwald (Univ. of Leipzig), Baudouin de Courtenay (Univ. of St. Petersburg) and Otto Jesperson (Univ. of Copenhagen)—have resigned for similar reasons. Dr. Talmey further states that Ilo "is not simplified Esperanto." The official circular sent out by the aforesaid committee says: "In short, the *Linguo Internaciona* (Ilo) is a simplified and improved Esperanto, very similar to primitive Esperanto."

In spite of Dr. Talmey's denial, Esperanto is increasing at a greater rate, according to the returns, during the last three months than ever before, and the defections are absolutely insignificant. It numbers very many times as many adherents as all the other would-be international tongues, including Ilo, put together. That is the only argument (except ease of acquisition) that will carry weight with the "man in the street" whose adhesion is the one indispensable requisite for the attainment of the object. While Volapük really failed from its intrinsic demerits, the fact that it did fail after gaining a certain measure of success (which, however, never came within measurable distance of that attained by Esperanto) is the greatest obstacle that any proposed international language has to face to-day. The replacement of Esperanto by Ilo, or by any other of its twenty odd competitors, would only magnify this obstacle and throw back the international language idea half a century. The "man in the street" would agree with the position in 1894 of M. de Beaufront, the adapter of the Ilo variant. M. de Beaufront, then an ardent champion of Esperanto—according to him "the simplest, clearest, most flexible, euphonious and beautiful of all systems"—opposed at that time all suggested changes, even those proposed by the author of Esperanto, saying: "If after five years you find that the language must be changed, nothing guarantees us that after five years more you will not find that the new language must still be changed, and so on for ever." (This refers, of course, to *a priori* changes by a bureaucratic "authority," not to the changes that must inevitably take place in evolution, which will occasion as little inconvenience to the Esperanto-speaking people as the changes continuously taking place in English do to English-speaking people.)

To physicians contemplating taking up Esperanto I would say: "Do not be deterred by the Ilo shouting. Esperanto is miles ahead and shows no signs of being winded. Even should the impossible happen, and Ilo ultimately succeed in getting the lead, your time will not have been wasted, for any competent Esperantist can become an Iloist in a few days. I speak from practical experience. The changes in grammar can be learned in half an hour, those in roots in a few days, while the new roots would require no more labor than if they had been introduced directly into Esperanto."

Finally, at the Dresden Esperanto Congress, last August, an International Association of Esperantist Physicians was formed, with Professor Dor, of Lyons, as president, and Dr. W. Robin, of Warsaw, as secretary. The subscription is only 81, and the members receive free the official organ, the *Voĉo de Kuracistoj* ("Voice of the Physician"). Any further information will be gladly given by

KENNETH W. MILLICAN,
Local Consul for U. S. A., International Association of Esperantist Physicians.
1143 Sheridan Road, Chicago.

Quarantine in Smallpox

To the Editor:—I have read with interest the paper by Dr. Bracken entitled, "The Quarantine of Smallpox," in THE JOURNAL, Dec. 19, 1908.

It is an extremely favorable sign when those who are responsible for the protection of the public health indicate a

desire to discharge their important duties with the least possible annoyance and expense to the public. This is in full accord with modern sanitation. The position taken by Dr. Bracken and Dr. Hurty, however, in connection with the discussion of the paper above referred to can not, I am sure, be endorsed by the majority of practical sanitarians. I mean those who deal personally with smallpox and other infectious diseases, and who have given the subject careful consideration.

Success in the management of outbreaks of infectious disease depends principally on constant and thorough inspection to detect promptly the presence of the sick and afterward to secure their strict isolation. The policy which Dr. Bracken and Dr. Hurty recommend can not be said to conform to this principle as it may be assumed from what they say that it is rather a matter of indifference whether or not smallpox patients are isolated, and that they recommend this departure from the usual methods as a means of enforcing more efficient vaccination. This can hardly be accepted as a scientific or safe means of securing this result, because it favors the extension of smallpox and needlessly imperils the lives of citizens.

No one who is practically familiar with smallpox and who has compared the history of its ravages prior to the time of Jenner with the conditions which followed his great discovery can doubt the inestimable value of vaccination as a protection against smallpox. However, we must not overlook its shortcomings; all the agents employed in the protection of the public health have some defects, although practically this fact does not impair their usefulness.

Smallpox does not always protect against a second appearance of the disease in the same person, neither does a successful vaccination always protect against smallpox. It is true that these exceptions do not occur frequently, and if this constituted the only uncertainty regarding vaccination, Dr. Bracken's position would be more secure. The grave mistake in depending absolutely on vaccination to the exclusion of other means of protection against smallpox lies in the fact that we do not know how long the immunity secured by vaccination continues. We do know that a single vaccination does not always insure immunity for life; for this reason we advocate and insist on revaccination, but how often revaccination should be performed is entirely theoretical notwithstanding statements to the contrary. A successful vaccination in some instances may furnish immunity for life; in others for a very brief period only, and in our zeal to enforce vaccination we should not ignore these exceedingly important facts. Unqualified statements made by public health officials that successful vaccination is an absolute preventive against smallpox furnishes argument for antivaccinationists because they know as well as we do that smallpox does occur in persons who have been successfully vaccinated and sometimes revaccinated. Even persons who are favorable to vaccination not infrequently cite instances in which smallpox has appeared among their family or friends, who previously had been successfully vaccinated and they can not reconcile this condition with the statements to which I have referred. In this way, the public confidence in vaccination is impaired. This would not occur if the public were taught the real value of this important agent of protection.

There are yet many ways in which public health officials can improve their means of educating the public as to the importance of vaccination. There is a natural antagonism toward it particularly on the part of a father or mother, which can not be overcome by force or legislation, but would largely disappear if persons were properly educated as to the necessity for this protection.

In public vaccination, we deal largely with uneducated persons, particularly foreigners, many of whom are brought up to believe that almost any action on the part of the authorities is antagonistic to them. Vaccination is not compulsory in this country; therefore, the success we may have in public vaccination must depend largely on careful and painstaking education.

Dr. Hurty's intimation that a community should suffer from smallpox if the people refuse to be vaccinated is hardly in line with this policy and can not be regarded as a scientific or humane method of educating the public in this direction.

The first case of smallpox or infectious disease found in a community is not always the first one that has occurred; very mild cases often pass unrecognized and transmit the disease, and a secondary case may be the one which announces the outbreak, and other cases may be approaching the stage of invasion. Vaccination under these conditions does not offer full protection. There are also other conditions which interfere more or less in securing the full result of vaccination in a community and which practically can not always be overcome.

A careful review of this subject will demonstrate clearly that we can not abandon isolation, observation, etc., and rely entirely on vaccination for protection during outbreaks of smallpox.

In the beginning of his paper Dr. Bracken states that quarantine is an evidence of ignorance. This is not a fact. It is the improper use or rather the abuse of quarantine that is an evidence of ignorance. I assume that Dr. Bracken refers to the quarantine of well persons both at seaports and the interior who have been subjected to exposure, as I know of no one who would regard the removal of all restrictions in connection with the care and treatment of cases of infectious disease other than a menace to the public health.

Dr. Bracken refers to tuberculosis as an illustration that persons suffering from these diseases are not kept apart from the rest. It is true that at present it is deemed impracticable to place this disease under restriction, but it is not difficult for any one to understand what an enormous stride would be made toward its extermination if this could be done, and it is not at all unlikely that in the future tuberculosis will be dealt with in this manner, because such treatment would be in accordance with the principles of modern sanitation, which govern these conditions.

There are many instances in connection with outbreaks of certain infectious diseases on shipboard, and sometimes on land, where the detention of well persons who have been exposed is justifiable and reasonable. There is no doubt that in the past there has been too much detention and quarantine of suspected persons, which has unnecessarily interfered with their pursuits; and the belief that diseases are commonly transmitted by the clothing and effects of well persons has been largely responsible for this condition. However, this theory is being abandoned as indisputable evidence has been presented to show that diseases are transmitted by persons rather than things. In the future, this knowledge will justify greater liberty in dealing with those who have been in contact with the sick, particularly on land; and instead of detention or quarantine at home, we may, as a rule, substitute observation, which practically means a daily inspection for the purpose of detecting early the presence of disease, without materially interfering with the liberty of those who have been exposed.

I am sure that after a careful analysis of this subject the health authorities of other states can not consistently endorse the views or action taken by the Minnesota State Board of Health regarding the care and suppression of smallpox.

A. H. DOTY, Quarantine, N. Y.
Health Officer of the Port of New York.

Quinin Idiosyncrasy Inhibited by Morphin

To the Editor:—I wish to call attention to two subjects which I regard of therapeutic importance, and which I claim priority in reporting. My mention of the two subjects referred to is called forth by articles recently appearing in THE JOURNAL A. M. A.

The first relates to the treatment of intolerance of quinin by the administration of morphin plus atropin prior to giving the quinin or the synergists of quinin.

THE JOURNAL, Oct. 31, 1908, contains an abstract from an article by G. Nogara appearing in an Italian journal. The abstract is numbered 129, on page 1562, and reads as follows:

"Nogara reports a case of threatening acute malaria in which the necessary quinin caused convulsions with fever

whenever it was taken. After ineffectual trials of various preparations of quinin with the same disastrous results he decided to place the patient under the influence of morphin plus atropin. Under the influence of these drugs he tranquilly injected up to 15 grains of quinin without further disturbances, which promptly arrested the threatening symptoms."

In 1902, I published an article on "Difficulties in, and the Management of, Pernicious Malarial Fevers, with and Without Idiosyncrasy for Quinin" in the *Mobile Medical and Surgical Journal*. This article was copied in several other medical periodicals. The special point to which attention was called in the paper is the solving of this therapeutical problem by the administration of morphin plus atropin alone, prior to giving quinin.

I also wish to direct attention to the value of administering thymol in large doses, in punctured capsules, in amebic dysentery.

This mention is suggested by the article, "Medical versus Surgical Treatment of Amebic Dysentery" in THE JOURNAL, December 19. The administration of the thymol capsules may be preceded by a dose of magnesium sulphate; 20 grains of thymol are administered every two hours until three doses are given. The thymol capsules are withheld until active purging is begun and if necessary are followed by a saline purge. This treatment is repeated every second or third day, or at longer intervals according to the patient's tolerance. If necessary, this treatment may be followed by bismuth and opiates. On the day when the thymol is not given by the mouth, high colonic irrigations of thymol solution are given. Fluid diet is given throughout the treatment.

This line of treatment proved promptly effective in two serious cases in my practice and the patients have resumed work, which they had been unable to do for five or six years. Reports from these patients show increase of weight and apparent recovery, though in neither case were subsequent microscopic examinations made. As instructions were given to repeat the treatment once every week or oftener if symptoms returned, I can not assert a positive cure. I think that a report of the value of this method may lead others to investigate it in order to determine its ultimate value, and it may prove preferable to appendicostomy with irrigation.

G. H. FONDE, M.D., Mobile, Ala.

[COMMENT: Apparently Nogara had never heard of the use of morphin with quinin in malaria, as he states in his article that he thought of it, but hesitated at first to try it as he had no opportunity to experiment with it.—ED.]

Local Applications in Appendicitis

To the Editor:—Under the above heading in THE JOURNAL, June 27, 1908, p. 2121, there appeared an article by Dr. J. E. Moore, in which the use of the ice bag in acute appendicitis was referred to as the height of folly and as *post-hoc* reasoning.

For years I have used ice applications (preferably drain ice bags) extensively in hospital and private practice, in many acute ailments, including selected cases of acute appendicitis, and at no time has injury been observed to the regions where such applications were made.

No ice-bag application of ordinary size and kind can cause freezing of the parts applied, because the living tissues involved can never be cooled to or under the freezing point, as the ice is constantly in a melting and not freezing state (in an ordinary atmosphere with the temperature about 70 F.).

No one, of course, would use freezing mixtures, nor use such a large amount of ice as to cause a possible damage by weight, in obstructing the circulation of the parts.

It is not correct to say that the therapeutic effect of ice application is only superficial or skin deep. The application of ice to the human body means the exposure of such parts to forms of heat rays, that is to molecular and ethereal vibrations peculiar to ice in a state of liquefaction. These heat rays penetrate different media according to their nature. Some media are poor conductors, some are good. The living, human body affords no great barrier to these "ice-rays." They are transmitted by direct continuity of tissues exposed.

Necessarily, ice applications have their limitations. The period of elimination, when established, may demand their prompt removal, the use of drugs or the surgeon's knife. But, it should be understood, that it is "no *post-hoc* reasoning" nor "height of folly" to employ an ice-bag in the proper way and at the proper time,

Even many cases of acute appendicitis demand it and it should be considered negligence and poor treatment not to use it.

P. A. AURNESS, M.D., Minneapolis.

Book Notices

THE SEXUAL QUESTION. By August Forel, M.D., Ph.D., LL.D., formerly Professor of Psychiatry at and Director of the Insane Asylum in Zurich (Switzerland). English translation by C. F. Marshall, M.D., F.R.C.S., Late Assistant Surgeon to the Hospital for Diseases of the Skin. London. Pp. 536, with illustrations. Cloth. Price, $3.00. New York: Rebman Co.

This is an elaborate sociologic treatise that commands attention because of its fearlessness and its manifest humanity, however much some may be displeased at Forel's cynicism concerning religion. Few of us can study a sociologic subject without being greatly influenced by our habitual acceptance of many, at least, of the established dogmas of custom, society, law and religion, but this need not prevent our welcoming to the literature of this problem the contribution of one who, for purposes of absolute freedom of deduction, has attempted to disregard these dogmas.

The first part of the book is concerned with a simple and plain exposition of genesis, embryology, coitus, pregnancy, sexual characteristics and sexual appetite. Then broadening out, Forel discusses love and its irradiations, distinguishes between love and sexual impulse, and shows the various relations of both emotions to procreative instinct, jealousy, prudery, modesty, desire for domination, religion, etc. He here shows the extent of his study and the breadth of his altruism, bringing out many points that need to be borne in mind by physicians, educators, judges and in fact, by all who have dealings with their fellow men.

Then follow chapters on ethnology and history, sexual selection, sexual evolution and sexual pathology. These are refreshingly sane and free from the flippant vulgarity and unnecessary detail sometimes indulged in by writers whose familiarity with the subjects of which they write has made them forget not only the state of mind of some into whose hands the book will fall, but also their alleged purpose in writing the book. Wherever we may disagree with Forel, we must agree that he has a clean mind.

Now the book takes up the more sociologic side of the question, discussing its relation to money, property, alcohol, environment, religion, law, society, prostitution, means of preventing conception, politics, pedagogy and art. Forel proposes this general axiom: The coitus of two individuals, performed with mutual deliberation and causing no harm to a third person, should be considered as a private affair, and should have no connection with either civil or penal law. Here Forel takes a stand in opposition to custom, morals, law and religion, but it is not so bad as it sounds at first, for the third person proviso is really a very broad exception. The "third person" represents society and Forel is outspoken in the declaration that the good of society is a higher law than the right of the individual. It is interesting to note his mode of harmonizing these two demands—the rights of society and the rights of the individual—in his application of the general axiom above quoted to the problems presented by inverts and harmless perverts, whose acts are punishable under the laws of many lands. "The real crime," he declares, "is the marriage of an invert to an individual of the opposite sex, and yet this crime is sanctioned by the law!" Similarly he urges immunity from legal punishment for those forms of bestiality that are free from cruelty, as he is unable to see harm in them and as the relief afforded by them protects women and children (i. e., society) from attack by these perverts.

The work advocates as a social duty the separation of conception from the satisfaction of the sexual appetite and also, when useful or necessary, the avoidance of conception without the renunciation of sexual intercourse. "The welfare of our women and our posterity demands this consequence." To this end Forel discusses means for the prevention of conception and advocates the dissemination among the public of knowledge of the best method. His portrayal of the ignorance of men concerning the real sexual character of normal women, and the ignorance of girls concerning the sexual nature of the marital relation, lead to his emphasis of the need for parents to inform their children on the subject at the proper age.

The book is a good one for students of sociology. Its argument is not insidious, but frank. If proposals for a new basis of law and morals shock, they yet give no feeling of insincerity nor lack of study; especially is there no doubt of Forel's humanitarianism.

HIGH FREQUENCY CURRENTS. By Frederich Finch Strong, M.D., Instructor in Electro-Therapeutics at Tufts College Medical School, Boston. Cloth. Pp. 289, with illustrations. Price, $3.00. New York: Rebman Co.

Dr. Strong begins his preface: "In all ages of which we have any authentic knowledge, and among all races, there have existed Philosophers, Investigators or Students of the Occult, who have in divers forms, and many languages, repeatedly averred that the Universe—both visible and invisible—exemplified varied expressions of a single principle—VIBRATIONS. . . . *Matter* was called 'dead' or 'living' according to the reflected phenomena, and an apparently boundless gulf existed between the two. Science was becoming more and more complex, when the advance guard of a new era appeared . . . whose labors and researches have focused in the greatest discovery of any age—THE ELECTRON THEORY. . . . In the bright light which it throws on the phenomena of the universe, much that was dark and undefined has become lucid and coherent. All sciences have become united by invisible links, and we have for the first time in the history of the world a complete, harmonious system of natural philosophy, by which all facts of nature, however diverse, may be co-related and traced to a common origin."

As an introduction to a book on high frequency currents, we would say that this, to use a slang expression, is going some. It also suggests that it is the forerunner of a system of deductive therapeutic philosophy which will consider the treatment of diseases, not by painful inductions from petty clinical and pathologic observations, but from the grand viewpoint of an all-embracing therapeutic principle. Such a prospect would be entrancing, did it not suggest painful experiences with other grand therapeutic principles of the past, like Hahnemann's "Similia similibus curantur," and his dictum that most diseases arise from the itch. Dr. Strong gives further intimation of the scope of this almost universal therapeutic principle, saying: "*Tesla* first recognized the wonderful therapeutic possibilities of High-frequency Currents and prophesied that they would ultimately supersede the older systems based on the therapeutic use of Drugs; clinical results recorded during the past five years go far to confirm the accuracy of *Tesla's* prophecy."

In this work, which is apparently the second stage in the development of his system, Dr. Strong does not consider at length the therapeutic application of high frequency currents. The work is rather devoted to the physics and the technic of application of high frequency currents. This part of the work shows thoroughness and intimate familiarity with the subject and is entitled to be regarded as a good exposition of these subjects. The last thirty-five pages are devoted to a brief summary of the therapeutic applications of high frequency current in various large groups of diseases like diseases of the blood and heart, diseases of the nervous system, and infectious and malignant diseases. This part of the work appears to be hopelessly tinctured with Dr. Strong's optimism. The overweening enthusiasm and the magnificent disregard of pathology and clinical knowledge displayed in such books as this are largely responsible for the common distrust of things electrical by the medical profession.

LES DILATATIONS DE L'ESTOMAC. Séméiologie et thérapeutique des distensions gastriques. (Les Actualités médicales.) Par Dene-Gaultier, chef de clinque médicale à la Faculté de médecine de Paris. Boards. Pp. 95. Price, 1.50 francs. Paris: Libraire J.-B. Ballière et fils, 1909.

Readers of French will find in this little book an excellent presentation of this subject. The author relates fully and clearly all that is known of dilatation of the stomach. He considers its causation, the symptoms common to all causes and those peculiar to pyloric obstruction, to muscular weakness and to displacement. The differential diagnosis of dilation due to malignant tumors and to scars, the result of round ulcer is fully discussed. The newest methods of investigation as well as the oldest and best known are described. Especially noteworthy is the description of the technic and results of examination by the *x*-ray. Numerous illustrations show the valuable results obtained by its use, including the possibility of differentiating thereby the various forms of gastric dilatation. The last portion of the book deals with treatment—hygienic, non-medicinal, medicinal and surgical.

BUDDHISM AND IMMORTALITY. By William Sturgis Bigelow. Cloth. Pp. 75. Price, $0.75. New York: Houghton Mifflin Co., 1908.

In this Ingersoll Lecture, Dr. Bigelow describes the tenets of the northern, or Nepaulese, Buddhists, whose sect is closely allied to the two Japanese sects, the Tendai and the Shingon. It teaches essentially the possibility of ultimate freedom from the limitations of the material world. Bigelow aptly illustrates the difference between the consciousness of will and that of sense. The ultimate object of life, he says, is to acquire freedom from the limitations of the material world by substituting volitional for sensory consciousness. The so-called necessity that seems to oppose freedom of will is made up of the limitations of personality and material existence. The difference in beings lies in the varying degrees of their realization of the universal consciousness. Bigelow explains the doctrine of reincarnation in correlation with the facts of biologic science. To all interested in moral problems the book will be useful as giving a clear glimpse of the philosophy that for centuries has governed the mental attitude of millions of people.

THE BATTLE OF THE MICROBES, December, 1908. Paper. Pp. 28. The Merchants' Association of New York.

This pamphlet consists of an introduction and two parts—the first being extracts from a paper by Clark P. Collins, the second a summary of the report of the British Royal Commission on Sewage Disposal. Collins describes the various methods, dismissing the chemical precipitation method as unavailable because of the large amount of sludge and the great cost of chemicals and labor. Sewage farming is not applicable to conditions in this country so that the method of filtration is by far the best. The separate system of conveying sewage to the place of treatment is regarded as preferable. In case sewage has to be purified the separate system is more economical. The British Commission, on the other hand, does not regard the method of chemical precipitation as obsolete. The pamphlet is well adapted to give a good view of the sewage question in general.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

DIASTASIC POWER OF SALIVA—AMYLACEOUS DYSPEPSIA

[TRANSLATION]

To the Editor:—Permit me as one of the most regular readers of THE JOURNAL to speak in reference to the question of amylaceous dyspepsia and the therapeutic use of diastase, discussed in Queries and Minor Notes, Nov. 7, 1908, page 1618, as I believe that your complete denial of both conceptions goes somewhat too far.

In fact, it is a daily experience that in hyperacidity the stomach contents, an hour after a test breakfast, are imperfectly digested, which, in consideration of the high pepsin value of such contents, depends exclusively on insufficient digestion of starch. The iodin test shows that still unchanged starch, or at least erythrodextrin, is abundantly present. Even in the empty stomach remains of

bread, rice and potatoes are found, evidence that the stratification in the stomach is far from sufficient to guarantee a complete action of the diastase of the saliva.

It is not necessary to say that the insufficient digestion of the chief constituent of the food leads to abnormal fermentations, which in turn affect unfavorably the fundamental trouble in the stomach, the hyperchlorhydria (or hypersecretion). The time for the action of the diastase is all too short, if large amounts of highly acid juice are immediately poured out on the meal, for the ability of the proteins to combine with the acid and protect the diastase is quickly overcome in such conditions. I have not so far been induced to counteract this by administering diastase, but have always sought to prevent the formation of or to neutralize the acid. I can not regard it as irrational, however, to seek to utilize, as effectively as may be, by supplying diastase, in the short time during which a diastasic action is possible.

I do not understand why it is assumed that the interesting researches of Croft-Hill regarding the reversibility of the action of maltase should be brought into the field against such a therapy. Aside from the fact that these researches have reference only to the reproduction of maltose or rather of pseudomaltose from decomposition products, that is, from glucose, they apply only when the products of decomposition are able to accumulate and not, as in the stomach, where they are either absorbed or passed on into the intestine.

Finally, permit me to call attention to the fact that according to the present views, in case of reversible reactions the final result reached is entirely independent of the speed of the reaction and also of the amount of the catalytic agent, immaterial whether this belongs to the so-called ferments or not.

My conclusions from the above are that amylaceous dyspepsia actually does exist, depending not on insufficient secretion of diastase by the salivary glands, but on the premature concentration of H ions in the hyperacid stomach sufficient for complete inhibition of starch digestion. Undigested or imperfectly digested starch left in the stomach leads to the proliferation of germs of abnormal fermentation which injure the functioning of the stomach and also cause further pathologic decompositions in the intestine. There can be no theoretical objection to the attempt to compensate for the deficit of a short working period by increasing the amount of diastase, the less so as mixture of the stomach contents, even although it is probably not complete, still certainly does occur. In regard to this, new experiments on the horse from the Dresden veterinary school have been recently published in the *Zeitschrift für Physiologische Chemie*.

Whether better results are to be obtained by the administration of malt extract (malt sugar) or grape sugar (the intermediate and end products of starch digestion), or by simply neutralizing the acid, in addition to the causal therapy, need not be discussed here.

E. FULD,
157 Uhlandstrasse, Berlin, Germany.

ANSWER.—The foregoing communication seems to agree in substance with our answer to the questions concerning the therapeutic use of diastase and the meaning of "amylaceous dyspepsia." THE JOURNAL, page 1618, Nov. 7, 1908. In our former answer we stated that we may regard amylaceous dyspepsia to be a disturbance of the motility of the stomach, which accounts for the hyperchlorhydria, starch indigestion and abnormal fermentation. While neutralization of the acid by alkalis is valuable as a palliative measure and the use of diastase may present no theoretical objection, still if we wish to obtain practical therapeutic advantage, we must direct our attention to the etiology and pathology of the disturbance—motor insufficiency. Clinical experience has shown conclusively that in these cases, gastroenterostomy is followed by the disappearance of the hyperchlorhydria, the amylaceous dyspepsia and the abnormal fermentation, and this has also been observed in operative cases without pyloric stenosis. In non-obstructive conditions the same results may be obtained without surgical procedure by appropriate treatment directed to the motor disturbance.

So far as the application of the Croft-Hill experiments to the condition of the delay and the accumulation of the food in the stomach, we must remember that there is practically no resorption from the stomach, and the delay in the expulsion of the stomach contents into the intestines may provide favorable conditions for the application of the Croft Hill phenomenon—the reversibility of ferment action. Of this, however, there are no experiments to prove either the negative or the positive.

Amylaceous dyspepsia is a symptom that demands, not theoretical or symptomatic treatment, but the removal of the factors that make starch indigestion and abnormal fermentation possible.

DECAPSULATION OF KIDNEYS FOR NEPHRITIS

To the Editor:—Please inform me regarding the status præsens of the operation of decapsulation of the kidneys for chronic nephritis. J. LYNG, Alexandria, Minn.

ANSWER.—The value of decapsulation of the kidney in nephritis is a subject about which opinions are still divided, although, with increasing experience, the belief is steadily growing that the operation is of positive value, provided that the proper cases are selected. For the purpose of avoiding controversy, the term "nephritis" is here used to include all varieties of kidney changes, whether acute or chronic, but not the so-called surgical kidney. Up to the present, experience is not sufficiently great to enable one to select with certainty those cases in which a good result may be attained. The operation has been tried in practically all varieties of the trouble, with results which indicate that the least is to be hoped for in those cases in which the cardiovascular changes are the most marked. Some acute cases, with and without anuria, and some more or less chronic parenchymatous cases, have been reported in which rather striking results have followed, apparently as a direct consequence of the operation. In properly selected and well studied cases, the method is worthy of consideration and more extensive application. An article by Dr. George M. Edebohls on the subject will be found in this issue. An article by George F. Suker ("The Decapsulation of the Kidneys," THE JOURNAL, Feb. 27, 1904, xlii, 580) contains an extensive bibliography on the subject. Articles by Müller (*Arch f. klin. Chir.*, 1907, lxxxii, 217), by Harris (*Johns Hopkins Hosp. Bull.*, 1905, xvi, 404), and by Polano (*Centralbl. f. Gynäk.*, 1907, xxxi, 13) will also be found of interest.

FRENCH MEDICAL JOURNALS

To the Editor:—Please give me a list of three or four French medical journals, with subscription prices and publishers' addresses. FORREST J. YOUNG, Leesburg, Ind.

ANSWER.—The following are four good papers:

Archives Générales de Médecine. Publisher, A. Maloine, 25 Rue de l'Ecole de Médecine, Paris. Weekly. Subscription, 18 francs.

Presse Médicale, edited by F. De Lapersonne, P. Desfosses and others. Published by Masson et Cie., 120 Boulevard St.-Germain, Paris, VI. Bi-weekly. Subscription, 15 francs, including postage.

Semaine Médicale, edited by Dr. De Maurans. Office, 53 Avenue de Villiers, Paris. Weekly. Subscription, 10 francs, including postage.

Revue de Médecine. Edited by P. Landouzy, 15 Rue de l'Université, Paris. Published by Felix Alcan, 108 Boulevard St.-Germain, Paris. Monthly. Price, 23 francs, including postage.

VESTIGIAL ORGANS OF THE HUMAN BODY

To the Editor:—Please tell me where I can find information on the vestigial organs of the human body. C. A. NOLAN, Ogden, Ia.

ANSWER.—A discussion of vestigial organs in the embryo can be found in any extensive work on human embryology, such as Minot's "Human Embryology" or McMurrich's "Development of the Human Body." The subject is taken up more in detail in O. Hertwig's "Handbuch der vergleichenden und experimentalen Entwickelungslehre der Wirbelthiere," in three volumes and six parts (1906, Gustav Fischer, Jena). Darwin devotes a chapter to the vestigial organs in his "Descent of Man," which is good from the evolutionary standpoint. Perhaps the most complete and detailed account is to be found in R. Wiedersheim's "Der Bau des Menschen als Zeugnis für seine Vergangenheit (1893, Akademische Verlagsbuchhandlung von J. C. B. Mohr—Paul Siebeck), in which the phylogenetic and ontogenetic significance of these structures is discussed. An article by R. Wiedersheim, entitled "Organi rudimentali dell' uomo (*Riv. di sc. biol.*, Turin, 1900, ii, 801) may also be of service. All these books except the third (Hertwig's) and the fifth (Wiedersheim's "Der Bau des Menschen") can be borrowed from the library of the Surgeon-General's office.

The Public Service

Army Changes

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 9, 1909:

Borden, W. C., Mearns, E. A., majors, and Webb, W. D., capt., retired from active service.

Ebert, R. G., lieut.-col., granted leave of absence for 15 days.

Stark, A. N., major, granted an extension of 15 days to his leave of absence.

Kiersted, H. S., capt., granted an extension of 15 days to his leave of absence.

Koerper, C. E., capt., ordered to Ft. Slocum, N. Y., for duty, on return from Cuba.

Fauntleroy, P. C., major, granted leave of absence for 3 months and 15 days, with permission to go beyond sea.

Sparrenberger, F. H., M. R. C., granted leave of absence for 10 days.

Brewer, I. W., M. R. C., granted leave of absence for 20 days.

Richardson, G. H., M. R. C., honorably discharged from the service of the United States, his services being no longer required.

Bloombergh, H. D., Purnell, H. S., capts., and Lincoln, H. F., LeHardy, J. C., M. R. C., Millikin, J. D., dent-surgeon, sailed from San Francisco, Jan. 5, 1909, on the *Thomas*, for duty in the Philippines division.

Morse, C. F., capt., McCallum, F. M., M. R. C., sailed from San Francisco, Jan. 5, 1909, on the *Thomas* for duty in the Hawaiian Islands.

Carpenter, Alden, dent.-surg., relieved from duty with Army of Cuban Pacification, and ordered to Fort Hancock, N. J., for duty.
Hadra, Frederick, M. R. C., relieved from duty in Philippines Division, and ordered to San Francisco, for further duty.
Kress, C. C., M. R. C., granted leave of absence for 1 month.

Navy Changes

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 9, 1909:

Murphy, J. A., surgeon, detached from the *Franklin* and ordered home to await orders.
Denton, F. L., surgeon, detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered to the *Franklin*.
Iden, J. H., P. A. surgeon, detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered to the Naval Hospital, Pensacola, Fla.
Holloway, J. H., P. A. surgeon, detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered to the *Franklin*.
Backus, J. W., P. A. surgeon,, detached from the Naval Station, Quantanamo, Cuba, and ordered home to await orders.
Bishop, L. W., P. A. surgeon, detached from the Naval Recruiting Station, Omaha, and ordered to the *Hancock*.
Riggs, R. E., P. A. surgeon, ordered to the *Texas*.
Robnett, A. H., asst.-surgeon, detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered to the Naval Recruiting Station, Omaha.
Allen, A. H., asst. surg., detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered to the Naval Hospital, Las Animas, Colo.
Sellers, F. E., asst.-surgeon, detached from the *Texas* and ordered to the Naval Station, Key West, Fla.
R. Hayden, detached from duty with the Marines in Cuba, First Provisional Regiment and ordered to the Naval Station, Quantanamo, Cuba.
Mears, J. B., asst.-surgeon, detached from duty with the First Provisional Regiment of Marines, and ordered to the *Franklin*.
Plummer, G. R., acting asst. surgeon, detached from the Naval Station, Key West, Fla., and ordered home to wait orders.
Campbell, R. A., detached from the *Franklin* and ordered home to wait orders.
Zalesky, W. J., P. A. surgeon, detached from the Naval Recruiting Station, New Orleans, and ordered to continue duty at the Naval Station, New Orleans.
Sellers, F. E., asst.-surgeon, orders of December 31 modified; detached from the *Texas* and ordered to the Naval Recruiting Station, New Orleans.
Hayden, H., asst.-surgeon, detached from duty with the First Provisional Regiment of Marines in Cuba, and ordered home to wait orders.
Dixon, W. S., medical director, transferred to the retired list, Jan. 5, 1909, in accordance with the provisions of Section 1444, Revised Statutes; ordered to continue duty at Naval Dispensary, Washington, D. C., until further orders.
Hayden, R., asst. surgeon, ordered to the Naval Station, Guantanamo, Cuba.
Lowndes, C. H. T., surgeon, ordered to duty at the Naval Dispensary, Washington, D. C.

Public Health and Marine-Hospital Service

List of changes of stations and duties of commissioned and other officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 6, 1909:

Cobb, J. O., surgeon, leave of absence, granted Nov. 30, 1908, for 15 days from December 22, revoked.
Cofer, L. E., P. A. surgeon, granted 1 day's leave of absence, Dec. 31, 1908.
Goldberger, Joseph, P. A. surgeon, granted 7 days' leave of absence from Dec. 26, 1908, under paragraph 191 Service Regulations.
de Valin, Hugh, asst.-surgeon, granted 21 days' leave of absence from Dec. 30, 1908.
Ridlon, Joseph R., asst.-surgeon, relieved from duty at Stapleton, N. Y., directed to proceed to New Orleans, La., and report to the medical officer in command for duty and assignment to quarters, Jan. 5, 1909.
Grace, John J., acting asst.-surgeon, granted 3 months' leave of absence from Jan. 10, 1909, without pay.
Light, S. D. W., acting asst.-surgeon, leave of absence, granted Dec. 16, 1908, for 3 days without pay, revoked.
Parker, Thomas F., acting asst. surgeon, granted 5 days' leave of absence from Jan. 1, 1909.
Wetmore, W. O., acting asst.-surgeon, granted 7 days' leave of absence from Dec. 18, 1908, under paragraph 210, Service Regulations.
Wilson, J. G., acting asst.-surgeon, granted 1 day's leave of absence, Dec. 27, 1908, under paragraph 210, Service Regulations.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 8, 1909.

SMALLPOX—UNITED STATES

Arkansas: Little Rock, Dec. 15-Jan. 2, 23 cases.
Indiana: Lafayette, Feb. 21-28, 7 cases.
Kansas: Wichita, Dec. 19-26, 1 case.
Maine: General. Canadian Border, Dec. 19-26, present; St. Agatha, Dec. 29, 15 cases; Van Buren, 2 cases.
Nebraska: South Omaha, Dec. 19-26, 1 case.
Pennsylvania: New Kingston, Dec. 29, present; Philadelphia, Dec. 18-25, 1 case; Pittsburg, Dec. 12-19, 1 case imported.
Tennessee: Nashville, Dec. 19-26, 1 case.
Texas: San Antonio, Dec. 19-26, 1 case.

SMALLPOX—FOREIGN

Arabia: Aden, Nov. 23-Dec 7, 25 deaths.
Brazil: Santos, Nov. 2-15, 2 deaths.
Canada: Halifax, Dec. 12-19, 1 case; Toronto, Nov. 7-14, 5 cases; Victoria, Dec. 5-12, 1 case.
Ceylon: Colombo, Nov. 7-Dec. 1, 25 cases, 4 deaths.
Elmira: Shanghai, Nov. 7-Dec. 1, present.
Egypt: Cairo, Dec. 2, 5 cases, 2 deaths.
France: Paris, Dec. 5-12, 2 cases.
Greece: Athens, Nov. 21-28, 2 deaths.
India: Bombay, Nov. 24-Dec. 1, 1 death; Calcutta, Oct. 31-Nov. 7, 1 death.
Italy: General, Dec. 6-13, 14 cases; Naples, 18 cases, 6 deaths.
Java: Batavia, Nov. 15-21, 2 cases.
Norway: Christiania, Nov. 21-28, 1 case, 1 death.
Portugal: Lisbon, Dec. 5-12, 1 case.
Russia: Riga, Dec. 5-12, 1 case; St. Petersburg, Nov. 15-22, 7 cases; Warsaw, Oct. 31-Nov. 14, 5 cases.
Spain: Barcelona, Dec. 5-12, 3 deaths; Valencia, Nov. 29-Dec. 5, 5 cases, 1 death; Vigo, Nov. 28-Dec. 5, 1 death.

YELLOW FEVER

Brazil: Para, Nov. 21-Dec. 12, 9 cases, 9 deaths.
Cuba: San Luis, Jan. 1-2, 2 cases, 1 death.
Ecuador: Guayaquil, Nov. 7-14, 1 death; Nov. 21-28, 2 deaths.
Mexico: Maxcanu, Dec. 12-19, 1 death; Merida, Dec. 12-26, 4 cases, 2 deaths; Sodsil plantation (vicinity of Merida), 6 cases, 4 deaths; Vera Cruz, Dec. 12-26, 6 cases, 3 deaths.

CHOLERA

India: Calcutta, Oct. 31-Nov. 7, 9 deaths; Madras, Nov. 14-20, 22 deaths.
Indo-China: Cholen, Nov. 9-15, 1 case, 1 death.
Russia: General, Nov. 15-28, 541 cases, 248 deaths.
Straits Settlements: Singapore, Nov. 1-14, 33 deaths.

PLAGUE

Ecuador: Guayaquil, Nov. 7-28, 4 deaths; Milagro, Nov. 17-31, 11 cases, 6 deaths.
Egypt: General, Nov. 25-Dec. 8, 145 cases, 28 deaths; Alexandria, Nov. 30-Dec. 7, 3 cases; Port Said, Dec. 7, 1 case.
Formosa: Nov. 7-14, 17 cases, 5 deaths.
India: Bombay, Nov. 24-Dec. 1, 5 deaths; Calcutta, Nov. 1-7, 10 deaths; Rangoon, Nov. 14-21, 3 deaths.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A Fee Bill Not Unlawful

In another department[1] appears the decision of the Iowa State Supreme Court in the habeas corpus case of W. A. Rohlf vs. Henry Kasemeier and the State of Iowa. This decision is of more than ordinary importance and interest to physicians, since it disposes of what is known as the "Bremer County Conspiracy Case," frequent items regarding which have appeared in the daily press during the last year and a half. The facts, briefly stated, are these:

The Bremer County (Iowa) Medical Society, at a meeting held in the summer of 1907, discussed the question of adopting a fee bill for the guidance of physicians practicing in the county. At the September, 1907, term of the Bremer County District Court, fourteen physicians of the county, nearly all the members of the county medical society, were indicted by the grand jury under Section 5060 of the Iowa Code, charged with the crime of attempting to form an illegal combination or trust to fix and regulate the price of medical services and fees.

This action of the grand jury, the first of its kind in medical history, we are informed, was due to the efforts of the state's attorney for the county, which efforts are said to have been due to the hostility of a local newspaper against the Bremer County Medical Society and medical men in general, which hostility is reported to have been one of the results of the campaign in the Iowa State Legislature for the adoption of the Food and Drugs Act. The adoption of this law restricted the business and, in some cases, eliminated from the state certain "patent medicine" and drug companies. If they could not do business in the state, naturally they would not advertise. If they did not advertise, the receipts of certain newspapers suffer. If a newspaper proprietor lost money following the passage of the Food and Drugs Act, he naturally held the medical profession, and especially the county and state societies, responsible, since they had worked most energetically and effectively for the passage of the bill. *Hinc illæ lacrymæ*! Perhaps the state's attorney for the county had been supported by the paper in question, and possibly he was under

1. Medicolegal Department, p. 246.

obligation to the editor, so that in this roundabout way the Bremer County Medical Society had to bear the punishment meted out to all men and organizations, so far as possible, who dare to incur the wrath of the proprietary medicine manufacturers.

Before the trial on the indictment could be held, habeas corpus proceedings were brought for the release of one of the physicians indicted, two points being raised in the petition: First, that a combination to fix and to regulate the price of the medical services was not a crime under the Iowa law, for the reason that medical services and medical fees are not a commodity; and second, that if they were a commodity, Statute 5060 was unconstitutional. Judge Kelley of Charles City, before whom the writ was brought, held that medical fees and services are not a commodity, and discharged the physician.

The case was appealed to the State Supreme Court, which rendered the decision referred to above, upholding the decision of the lower court that medical services are not a commodity and consequently do not come within the scope of the statute. The court further decided that the statute in question does not cover combinations to fix the price of labor of any kind, and approved the lower court's action in discharging the plaintiff.

A number of other suits incidental and subsidiary to the main case were at different times instituted and disposed of. The important point in the entire matter, however, is the decision of the Supreme Court that a medical society or a combination of physicians has the right to fix the price which its members shall be paid for their services. The Bremer County Medical Society is entitled to the congratulations of the profession on the outcome of the case.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Second Weekly Meeting

Surgery of the Stomach (Continued)

GASTRIC AND DUODENAL ULCERS (*Continued*)

HEMORRHAGE

HEMORRHAGE FROM "ACUTE ULCER."—First symptom, no previous history, may be from peptic ulcer, "villous areas," etc.

HEMORRHAGE FROM CHRONIC ULCER.—(1) Occult hemorrhages, (2) intermittent hemorrhage, moderate amount, (3) frequently repeated, abundant hemorrhages, (4) instant, copious, lethal hemorrhage.

OPERATIVE TREATMENT.—Direct method by incision, ligation or cauterization of bleeding point. Indirect method by performing gastroenterostomy.

PYLORIC OBSTRUCTION

ETIOLOGY.—Benign and malignant tumors, fibroid degeneration of pylorus, cicatrization of ulcers, congenital hypertrophic stenosis, spastic contraction from hyperchlorhydria; inflammatory adhesions, gastroptosis, gallstones or tumors of surrounding structures.

OPERATIONS.—Posterior gastroenterostomy, technic of Moynihan, of Mayo. Anterior gastroenterostomy, Roux' operation. Gastroduodenostomy or pyloroplasty, Jaboulay, Kümmell, Villard, Kocher, Finney.

CANCER OF THE STOMACH

Diagnosis and indications for operation in (a) pyloric cancer, (b) mural cancer.

Operations, exploratory incision, gastrostomy (Sabanajew-Franck, Senn, Kader, Witzel) jejunostomy, gastroenterostomy, resection or extirpation of stomach.

GUNSHOT WOUNDS OF STOMACH

Effect of caliber and velocity of missile. Injury to other organs. Probability of infection, of spontaneous recovery. Indications for exploration; details of operation.

Marriages

JOHN D. SCOULLER, JR., M.D., to Miss Edith Husted, both of Pontiac, Ill., December 23.

WILLIAM H. GREENE, M.D., to Miss Anita Goodfellow, both of Boston, Mass., December 30.

DANIEL F. CLANCEY, M.D., to Miss Edna Kiser, both of Virginia City, Mont., December 22.

CORNELIUS COLLINS WHOLEY, M.D., to Miss Alice Douthitt, both of Pittsburg, Pa., December 28.

GUY ELLIOTT MARCY, M.D., Tacoma, Wash., to Miss Isabel Coe, of LeClaire, Iowa, December 30.

GRANVILLE EASTHAM, M.D., to Miss Mary J. Tinsley, both of Culpepper County, Va., December 24.

JOSEPH T. HORNBECK, M.D., to Miss Georgia Munn, both of Nevada, Mo., at Kansas City, November 1.

RICHARD S. HOOKER, M.D., Philadelphia, Pa., to Miss Anne H. Stam of Chestertown, Md., November 14.

CHARLES LEROY WILLIAMS, M.D., to Miss Clara Agnes Houck, both of McMinnville, Ore., December 22.

ARTHUR DUNNING MANSFIELD, M.D., Baltimore, Md., to Miss Elizabeth Ball, at Chestertown, Md., December 30.

EDWARD FITCH BRIGGS, M.D., Bedford Station, N. Y., to Miss Sue Smallwood Monroe, at Waldorf, Md., December 30.

Deaths

Charles Denison, M.D. University of Vermont, Burlington, 1869; a member of the American Medical Association; who went to Colorado from Hartford, Conn., on account of pulmonary hemorrhages in 1873, and settled in Denver, where he devoted his attention to the study of climatology with especial reference to climate and tuberculosis; for fourteen years professor of diseases of the chest and climatology in the University of Denver, and since that time emeritus professor; president of the American Climatological Association in 1890; and author of numerous monographs on the subject of climatology and tuberculosis; died at St. Luke's Hospital, Denver, January 10, from gangrene following cholecystitis, aged 63.

Joseph H. Rinehart, M.D. Starling Medical College, Columbus, 1884; a member of the American Medical Association, and vice-president of the Yellowstone County (Mont.) Medical Society; coroner and secretary of the board of health of Yellowstone County; for one term mayor of Billings; a member of the board of U. S. Pension Examining Surgeons, and local surgeon for the B. and M. Railway; one of the oldest and best known physicians of Billings; from 1890 to 1892 a resident of Ballard, Wash., and member of the state legislature from King County, died suddenly, from heart disease, in his office, December 31, aged 59.

Charles F. Kieffer, M.D. Jefferson Medical College, Philadelphia, 1891; who entered the medical corps of the army as assistant surgeon in 1891, served through the Spanish-American War as major-surgeon of the Forty-eighth U. S. Infantry; and was retired from the army at his own request early in 1908, and settled in Cheyenne, Wyo.; a member of the American Medical Association; and a surgeon and administrative officer of great ability and promise; died in St. John's Hospital, Cheyenne, December 30, four days after an operation for appendicitis, aged 39.

Lawrence Darling Knowles, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the American Medical Association; Association of Military Surgeons of the United States, and Kalamazoo Academy of Medicine; major and surgeon of the Thirty-second Michigan Infantry, U. S. V., during the Spanish-American War, and later promoted to lieutenant-colonel; a member of the state board of U. S. Pension Examining Surgeons; died at his home in Three Rivers, Mich., December 29, from angina pectoris, aged 59.

Edward C. Lewis, M.D. Jefferson Medical College, Philadelphia, 1862; for several years president of the board of trustees of the Children's Home, and surgeon for the Cleveland and Pittsburg and Cleveland and Marietta railroads at Canal Dover, Ohio; in 1873 representative from Tuscarawas County in the state legislature, and later state senator for one term from the eighteenth district; died at his home in New Philadelphia, January 3, from cerebral hemorrhage, aged 64.

William G. Weaver, M.D. University of Pennsylvania, Philadelphia, 1878; a member of the American Medical Association and National Association of Railway Surgeons; supreme medical examiner of the Fraternity of Home Protectors; a member of the surgical staff of Wilkes-Barre City Hospital and Mercy Hospital; for twenty-nine years a member of the school board; major and surgeon Ninth Infantry, N. G. Pa.; local surgeon to the Lehigh Valley R. R.; died at his home in Wilkes-Barre, December 28, aged 62.

Thomas D'Arcy Sharkey, M.D. Medical College of Ohio, Cincinnati, 1893; a member of the American Medical Association, and Union District Medical Society; city physician of Hamilton, Ohio, and a member of the local board of pension examining surgeons from 1895 to 1898; a member of the Hamilton city council from 1896 to 1898; and coroner of Butler County from 1901 to 1905; died suddenly at his home in Hamilton, January 2, from acute gastritis, aged 42.

William Nevin Hill, M.D. Washington University, Baltimore, 1874; of Baltimore; a member of the Medical and Chirurgical Faculty of Maryland; well known on account of his efforts to exterminate the mosquito and to reclaim the swamp lands of Maryland; secretary of the National Drainage Congress; died at the Shepard and Enoch Pratt Hospital, near Towson, Md., from brain tumor, December 25, aged 51.

Henry A. C. Anderson, M.D. Bellevue Hospital Medical College, New York City, 1870; of New York City; a member of the Medical Society of the State of New York; formerly president of the United German Societies of New York; bacteriologist of the health department in 1898 and 1899; died suddenly from heart disease, January 5, in a cafe in New York City, aged 70.

John Gladden Johnson, M.D. University of Heidelberg, 1869; a member of the Michigan State Medical Society; for many years professor of nervous diseases in Detroit Medical College; attending physician to St. Luke's Hospital and St. Joseph's Resort for the Insane, Detroit; died from heart disease, at his home, December 31, aged 65.

Alice Boole Campbell, M.D. New York College and Hospital for Women, New York City, 1867; one of the founders of the Eastern District Hospital, and Woman's Hospital; a member of the governing board of the New York College and Hospital for Women; died at her home in Brooklyn, December 31, from angina pectoris, aged 72.

Joel Whitney Bonney, M.D. Missouri Medical College, St. Louis, 1858; formerly of Quincy, Ill., and a member of the state legislature, but for eight years a resident of Pacific Grove, Cal.; died at the home of his daughter in East San Jose, Cal., December 9, from pneumonia, aged 82.

James William Tankard, M.D. Washington University, Baltimore, 1869; a member of the American Medical Association, and for 35 years a practitioner of Lillian, Va.; died in the University Hospital, Baltimore, December 31, five days after an operation for abscess of the liver, aged 62.

Edwin Smith Belden, M.D. Bellevue Hospital Medical College, New York City, 1867; of Oakland, Cal.; formerly a contract surgeon in the army, but of late years a court stenographer of San Francisco; died suddenly, December 29, at Glen Ellen, Cal. from heart disease, aged 65.

Thomas Bernard Dwyer, M.D. New York University, New York City, 1888; a member of the Medical Society of the State of New York; a specialist on diseases of the ear, nose and throat; of Syracuse, N. Y.; died suddenly from heart disease, in that city, January 1, aged 51.

Thomas Emory, M.D. University of Virginia, Charlottesville; surgeon in the Confederate Navy during the Civil War; for many years a business man of Syracuse, N. Y.; died at the home of his nephew in Annapolis, Md., August 31, from cerebral hemorrhage, aged 64.

B. Rush Holcomb, M.D. Albany (N. Y.) Medical College, 1864; a member of the Medical Society of the State of New York; assistant surgeon of N. Y. volunteers during the Civil War; died at his home in Whitehall, N. Y., December 31, aged 68.

Loren Perle Lee, M.D. Starling Medical College, Columbus, 1903; a member of the Ohio State Medical Association; was accidentally shot and killed while examining an automatic revolver at his office in Rutland, Ohio, December 30, aged 33.

Charles William Eddy, M.D. Miami Medical College, Cincinnati, 1877; a member of the Ohio Pediatric Society and American Association of Life Insurance Examiners; died at his home in Marietta, Ohio, December 28, aged 55.

Charles M. Brasted, M.D. University of Buffalo, N. Y., 1881; of Hornell, N. Y.; a member of the American Medical Association; died suddenly from heart disease, January 1, while making an emergency call in Hornell, aged 50.

James John O'Sullivan, M.D. Western Pennsylvania Medical College, Pittsburg, 1906; assistant professor of hygiene in the University of Pittsburg; a noted athlete; died in Denver, December 26, from heart disease, aged 23.

Morris May, M.D. Medical College of Ohio, Cincinnati, 1895; of Cincinnati; a member of the Ohio State Medical Association; died at the Bethesda Hospital, Cincinnati, December 27, from diabetes, aged 37.

Sidney S. Wood, M.D. Jefferson Medical College, Philadelphia, 1855; formerly a practitioner of St. Joseph, Mo., and New Orleans; died at his home in Orange, Cal., November 27, from uremia, aged 83.

Isham S. Talbot (years of practice, Mo.); a practitioner of Easton, Mo., for 47 years, died at his home, December 6, aged 70.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, Jan. 26.

AMERICAN ROENTGEN RAY SOCIETY

Ninth Annual Meeting, held at New York, Dec. 28-30, 1908

The President, DR. EUGENE W. CALDWELL, New York, in the Chair

Officers Elected

The following officers were elected: President, Dr. George C. Johnston, Pittsburg; vice-presidents, Drs. William Allen Pusey, Chicago, Sydney Lange, Cincinnati, A. W. Crane, Kalamazoo, Mich., W. L. Newcomet, Philadelphia, and H. W. Van Allen, Springfield, Mass.; secretary, Dr. Percy Brown, Boston; treasurer, Dr. Charles F. Bowen (re-elected), Columbus, Ohio; executive committee, Drs. Henry K. Pancoast, Philadelphia, Alfred T. Osgood, New York, and F. H. Baetjer, Baltimore.

The next annual meeting will be held in Detroit, the time to be determined later.

Value of Roentgen Ray Examination

DR. GEORGE H. STOVER, Denver: The fluoroscope should be dismissed from consideration as a means of diagnosis because it is only rough and approximate in its information, and it is not a permanent record which may be studied at leisure under regulable conditions and preserved for future use, either in the study of the progress of a case or as a basis of medicolegal evidence. The radiograph alone is worthy of consideration. Prints or plates should not be given to a patient because he is likely to misinterpret it, a fact which is likely to prove disastrous in the case of an impressionable patient. Furthermore, the patient is sent to the radiographer for an opinion as to his condition, and not for a picture of himself. Neither should skiagrams be exhibited to a jury, because its members are not capable of reading a skiagram or of interpreting correctly what it shows. Also, too much weight is given to the plate, because as a general proposition visual impressions are more powerful than auditory ones. The radiographer should render his opinion to the physician who referred the case, preferably by demonstrating the skiagram to him.

DISCUSSION

DR. A. L. GRAY, Richmond, Va.: It is important to make a skiagram of every case of injury so that the evidence shown may be used in case of suit; but the plate should not be exhibited to the jury; nor should a print be given to the patient.

DR. M. K. KASSABIAN, Philadelphia: I believe that the skiagram is a most valuable evidence in court because it is a tangible thing, one which can be demonstrated to judge and jury, and which forms indisputable evidence.

DR. GEORGE H. STOVER, Denver: Too often patients pass around among their friends a radiograph which they consider in the same light as a portrait, thus detracting from the real value of the radiogram.

Roentgen-Ray Diagnosis of Osteitis Fibrosa

DR. S. CUMMINGS, Toronto, Can.: This disease, first described by von Recklinghausen, is essentially a disease of the bone marrow, which may be localized in a single bone or may invade the entire bony skeleton. The normal bone marrow is replaced by fibrous or lymphoid material, and the bone itself by osteoid tissue with the formation of cavities or cysts. The continuity of the bone is not interrupted, unless a fracture occurs. Prior to the introduction of the Roentgen ray as a diagnostic agent, the disease was rarely recognized, and it is extremely probable that many cases of so-called fragilitis ossium were really cases of osteitis fibrosa.

Roentgenographic Study of Motion in Viscera

DR. CHARLES LESTER LEONARD, Philadelphia: By means of the radiograph it is possible to make such rapid exposures that there are registered the individual phases of the visceral shadow on the plate: the forms of the viscus in each phase of its normal or pathologic motion can be studied at leisure and by means of reconstruction. Dilatations and hypertrophies of the left auricle and right ventricle which escape all other means of diagnosis can thus be detected. Small aneurisms and dilatations of the aorta can be recognized, and often the pulse wave can be shown differentiating these conditions from mediastinal growths. The varying positions of the diaphragm may be noted and interpreted correctly as evidences of disease. Probably the most valuable field for the study of visceral motion will be found in the gastrointestinal tract. Fortunately, the movements of the viscera are not so rapid that they make necessary very short exposures to eliminate their motion.

The Roentgen Ray in the Diagnosis of Carcinoma of the Stomach

DR. GEORGE E. PFAHLER, Philadelphia: My remarks are based on a study of 29 cases in which evidence of carcinoma was clearly demonstrable, and in most of which the diagnosis was confirmed by operation, autopsy or the subsequent clinical course of the case. In the majority of these cases the tumor was not definitely palpable, or not at all, and in all the cases the rays not only located the tumor, but disclosed its extent. The evidences of carcinoma of the stomach usually consist of changes in the course of the food through the stomach or changes in the outline, position, mobility or peristaltic movements. I am convinced that by this means a diagnosis can be made before it is possible with any other means at our disposal.

Roentgen-Ray Evidence in Gastric Ulcer

DR. A. W. CRANE, Kalamazoo, Mich.: I have found that the *x*-ray is extremely valuable in diagnosing gastric ulcer when other means of diagnosis fail. The diagnostic factors are (1) size, (2) form, (3) position of the stomach, (4) its clearance of food, (5) the location of the pain marker, the latter consisting of a leaden letter "P" which is placed over the seat of pain. This may locate the seat of the pain in the pylorus, the fundus, the pancreas, duodenum or other portion of the small intestine, thus differentiating the case nicely. The globular and contracted form of stomach are distinctive of ulcer.

Radiographic Examination of Gastrointestinal Tract

DR. HENRY K. PANCOAST, Philadelphia: Characteristic alterations in the position of the stomach and the descent of the greater curvature considerably below its normal level are sufficient data on which to base a diagnosis of gastroptosis in the majority of instances. The skiagraph is useful in indicating the anatomic defects most in need of correction, or those whose correction is most likely to be followed by favorable results, and in suggesting the most appropriate measures to employ. It is also important to determine the position of the liver and of the colon. The success of an operation may be greatly impaired through failure to observe the position of the colon. The colonic displacement is likely to be relatively greater when it has arisen independently and is an essential factor in causing the gastroptosis. It is impossible to radiograph adhesions, but their presence and their location may be indirectly suggested in many instances, particularly when they involve the transverse colon. It is essential that the radiographer be familiar with the various operations employed in the treatment of gastroptosis in order that he may be able to recognize whether any operative procedure is indicated, and if so, which one. Among the indications for operation are marked gastric dilatation, retention of food, and evidence of a mechanical kink and of a relaxed gastrohepatic ligament.

Expectant Treatment of Old Sinuses

DR. ARTHUR HOLDING, Albany, N. Y.: I inject into the sinus an aseptic suspension of bismuth subnitrate, one part, in petrolatum, two parts, using an aseptic glass syringe of large capacity. Then I make a skiagraph of the parts. This may be done stereoscopically to good advantage. Having determined the course of the sinus, a copper wire electrode is fashioned so that it can be inserted to the bottom of the sinus. This is attached to the positive pole of a galvanic current and the sinus is treated as often as is necessary in order to remove scar tissue, stimulate granulations and render the tract aseptic. When the discharge is controlled, the sinus is ready for injection with a mixture consisting of equal parts of bismuth and iodoform to two parts of petrolatum and soft paraffin. In my experience, this method of treatment has proved satisfactory.

DISCUSSION

DR. CHARLES L. LEONARD, Philadelphia: For outlining the sinus tract with the *x*-ray, iodoform is as useful as bismuth, being metallic.

DR. GEORGE C. JOHNSTON, Pittsburg: In the Children's Hospital in Pittsburg the bismuth-petrolatum injection has been used considerably and with much satisfaction, a cure having been effected in many old cases that had resisted all other methods of treatment.

DR. H. W. VAN ALLEN, Springfield, Mass.: I do not think that it is necessary to use the copper wire, these sinuses healing very rapidly following the injection of bismuth and petrolatum.

DRS. H. W. DACHTLER, Toledo, Ohio, and S. CUMMINGS, Toronto, reported cases of bismuth poisoning following the use of the bismuth-petrolatum paste.

DR. ARTHUR HOLDING, Albany: The results following the use of the paste are better if the sinus tract is first rendered aseptic by means of the galvanic current, and therefore I always use the copper wire before making such an injection.

(*To be continued*)

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Eighteenth Annual Meeting, held at Minneapolis, Dec. 29 and 30, 1908.

(*Continued from page 159*)

Chronic Dilatation and Prolapse of the Stomach

DR. ARTHUR E. BENJAMIN, Minneapolis: Dilatation of the stomach is now engaging the attention of the medical and surgical world. Recent investigations have demonstrated that reported deaths due to heart failure, gastralgia, acute indigestion, and so forth, in some instances may have been due to acute dilatation of the stomach. The various terms applied to this condition, such as gastromesenteric ileus and postoperative gastric paralysis, indicate that the pathology, etiology and *modus operandi* are not thoroughly understood. Chronic dilatation and prolapse of the stomach are often interdependent and associated, and as possible antecedents of an acute dilatation they must be recognized. They should also be considered as factors in the causation of ulcers or

cancer. The causes for dilatation and prolapse may be similar, and primarily are often due to indiscretion in diet, followed by weakened gastric support, motor insufficiency, or partial obstruction. The exact nature and variety of the ptosis or the dilatation should be determined, if possible, by *x*-ray and other means. Symptoms actually due to chronic dilatation or prolapse are frequently termed hysteria, neurasthenia or nervous dyspepsia. Acute upper abdominal pain or attacks of vomiting are often misinterpreted; they are frequently due to acute pyloric or duodenal obstruction and gastric distention. Hyperchlorhydria, postoperative vomiting and vomiting of pregnancy may be dependent on the presence of chronic dilatation or prolapse of the stomach. The treatment should depend on the conditions found. Simple cases are often amenable to medical and mechanical means, such as diet, exercise, mechanical support, and hygiene. Certain patients should be operated on, especially those with actual pyloric or duodenal obstruction or dilatation of the sagging type, and other aggravated cases not relieved by medical means. The tubulous types of prolapse need no operation. Some cases are dependent on an associated visceroptosis and relaxed abdominal walls. These should be properly treated to bring about the relief dependent on such a general prolapse In the sagging types the Beyea operation, either alone or supplemented by the Coffey operation, if there be an associated sagging of the transverse colon, should be done. Chronic dilatation of the stomach not dependent on obstruction and when not otherwise relieved is greatly benefited and often cured by the Bircher operation of plication. In chronic dilatation, dependent on a benign pyloric obstruction, a short loop gastroenterostomy should be performed. Obstruction or dilatation dependent on malignant growths may call for a pylorectomy. In operating, a careful search should be made for any other points of chronic bowel obstruction, as from disease of the gall-bladder, appendix, or from a kinking colon. These conditions may add to digestive disturbances, and should be corrected at the same time. All patients operated on should be followed for some time and the subsequent treatment carefully managed.

The Surgical Importance of the Intestinal Gases

DR. BYRON B. DAVIS, Omaha, Neb.: The points that practical surgeons need especially to have in mind are (1) to have as little fermentable substance as possible in the intestines before operation; (2) to do as little as possible during the operation, which will interfere with the normal circulation in the intestinal wall—this can probably best be prevented by a minimum amount of handling and resulting trauma; (3) to leave the intestines in the best condition for active peristalsis; long exposure and much cooling are inimical to active peristalsis.

Dilatation of the Stomach

DR. D. S. FAIRCHILD, Des Moines, Iowa, read a paper in which he discussed postoperative acute dilatation of the stomach.

Discussion on Dilatation of the Stomach

DR. R. C. COFFEY, Portland, Ore.: There are able men who consider prolapse of the stomach a non-surgical condition, while others believe that it is a surgical condition under practically all circumstances. From my experience I should say that there is a happy medium in this, just as there was a few years ago in gastric surgery of other kinds. One will not go to any important clinic in the country to-day and see gastroenterostomy performed for gastric ulcer and the ulcer will be easily demonstrated, and the scar is easily shown to the onlooker. It can be demonstrated not only to the surgeon himself, but to those who are looking on. Not more than 25 per cent. of the cases of prolapse of the stomach, as seen by the internist, have any surgical features. Probably not more than one in five has any surgical features, but the fact remains that a certain number do have surgical features and the results of surgical treatment are practically as good as in gastric ulcer. In a series of cases of last year's surgical work, of 29 stomach operations, 14 were for cancer, 10 for obstructive gastric ulcer, and 4 were for prolapse of the stomach.

DR. DANIEL N. EISENDRATH, Chicago: During the past few years at the Michael Reese Hospital, Chicago, special attention has been paid to acute cases of dilatation in order to determine the cause. It was found in a large proportion of cases that the direct cause of the acute dilatation of the stomach was repeated capillary hemorrhages, and this has been substantiated by examination of the washed contents and by other tests, showing that the hyperacid contents were bloody. There is no hematemesis in the sense that it comes from a gastric ulcer or from gallstone complications. During August I operated on a man who, in addition to appendicitis, had an acute gangrenous cholecystitis complicating gallstones. Everything went smoothly for thirty-six hours. The patient was happy, sat up in bed, and passed some flatus, so that I felt that there was no indication of peritonitis. Suddenly he began to vomit typical coffee-ground material in pint quantities at a time. He had rapid pulse, with extreme prostration. On washing out his stomach this typical coffee-ground vomit was found, which on analysis was blood. The diagnosis was made from the physical examination of the abdomen.

DR. CHARLES H. MAYO, Rochester, Minn.: If the internist picks out one case in twenty-five and sends it to the surgeon he would operate probably on one in five, which would be one in a hundred and twenty-five that presented symptoms. If the stomach becomes large, and is able to do its work, and to empty itself, it is probably not a surgical condition. If the pylorus is open, and there is no kinking of, operation may not be necessary. At Rochester we have done gastroenterostomies in cases in which there was kinking of the pylorus. In cases of enlarged stomach we have been asked whether or not we drained. We have never drained unless there were really obstruction or signs of obstruction by the retention of food. If the stomach is dilated, and yet still able to do its work, look for the condition which may be behind it. This may be a chronic congestion of some of the vessels.

DR. JABEZ N. JACKSON, Kansas City, Mo.: Some years ago I had two unfortunate experiences. In each instance I had a patient who belonged to that class of people in whom there was a marked disturbance of metabolism previous to operation, as evidenced by change in the color of the skin, flabbiness of the complexion, and general laxity of the tissues. These patients consumed an unusual amount of the anesthetic. I have therefore come to believe that probably the primary cause in most cases is a disturbance of the metabolism which is increased as the result of the toxic influence of the excess of anesthetic, and in recent years, since I have adopted the open method of administering ether, and giving it in small quantities, this trouble has disappeared, and while I have occasionally seen the early signs and symptoms of beginning acute intestinal dilatation, yet apparently they have not been attended with the fatal results which previously occurred.

DR. J. W. ANDREWS, Mankato, Minn.: I am reminded of the case of a woman, past middle age, with malignant kidney of sufficient size to bulge forward to a considerable extent, and which I removed through the peritoneal cavity. The patient did well for about ten days, then acute dilatation of the stomach occurred, commencing by vomiting of coffee-ground material. The patient died, and at the postmortem examination I found the largest dilated stomach I have ever seen. It was so enormously dilated that it reached to the brim of the pelvis. During the past year there has been a severe epidemic of typhoid in Mankato, with several cases of acute dilatation of the stomach accompanying it. In these patients the stomach was enormously distended; but the intestines were no more distended than usual in typhoid, yet every one of those patients died from acute dilatation of the stomach. Whether or not the cause was due to the hemorrhage spoken of, I do not know. At any rate, it is an extremely fatal condition.

DR. M. L. HARRIS, Chicago: In chronic dilatation of the stomach I have come to classify the cases under two heads, those in which there is mechanical obstruction and in which surgical interference is the proper treatment, and those in which there is no mechanical obstruction. It is doubtful, in my opinion, whether in the latter condition patients are benefited by operative measures. I have never seen any good reason for the plication of a dilated stomach. If a stomach is dilated as the result of mechanical obstruction, plication is

useless. If it is dilated not from mechanical obstruction, but from atony or any other condition, the plication will interfere with vermicular action.

DR. HENRY T. BYFORD, Chicago: A dilated stomach is different from a normal stomach. If the normal intestine be plicated it will interfere with its function, and if the stomach be plicated it will interfere with its contraction. There is a pouch, it hangs down, and can not relieve itself, and if it is a surgical case we can not very well diminish the contractile power of the stomach. In such a case, if we can bunch it up, relieve the pouch, help drainage through the duodenum, and help the physical condition, we are establishing temporarily postural treatment, thus giving the stomach a chance to empty itself, and as probably the adhesions will stretch after a while, we have not injured the stomach; we have not injured motility which does not exist.

(To be continued)

CALIFORNIA ACADEMY OF MEDICINE

Regular Meeting, held in San Francisco, Nov. 24, 1908

The President, DR. HOWARD MORROW, in the Chair

Anaphylaxis

DR. G. W. MCCOY, U. S. P. H. and M.-H. S.: It has long been known that a foreign serum injected into an animal is apt to give rise to certain symptoms and a fatal termination. That, however, is not the subject to be discussed. This hypersensitiveness to the serum is a symptom-complex that is manifest when an animal is given the second injection of the alien serum. The whole subject is merely a part of the larger subject of immunity, the history of which practically dates back three years when Rosenau and Anderson began their work in this country and Otto in Germany. Magendie about seventy years ago reported that while injecting egg albumin into rabbits he found occasionally that after the second injection the animals would die suddenly. He passed over this, but it proves the old saying that "there is nothing new under the sun." Any serum from any species will serve; a small dose given first and large doses afterward will cause a fatal termination. Horse serum is the one most largely used. An injection of extracts from the bodies of bacteria repeated after nine or ten days will produce analogous symptoms; in many cases the animal becomes immune. Rosenau and Anderson, by injecting killed cultures of typhoid and colon bacilli, at short intervals were able to immunize 100 per cent. of guinea-pigs. The tuberculin reaction is merely a manifestation of anaphylaxis. To sensitize an animal, a small amount such as 0.000,001 c.c. of serum is sufficient. This period of incubation corresponds very much to the period of incubation of some infectious diseases. It has been shown that it lasts in a guinea-pig for more than two years and probably throughout the remainder of its life. It takes a high degree of heat, maintained for some minutes, to destroy the poisonous agent, it differs in this from the agglutinins and the lysins. Freezing and thawing have no influence on it. It filters through porcelain. Almost anything short of the destruction of the serum leaves this substance intact. We know absolutely nothing about the nature of this phenomenon. Rosenau and Anderson hold that the primary injection develops in the animals some sort of antibody, and that when the second dose is given it unites and produces a highly toxic agent which rapidly kills. Gay and Southard say that the horse serum holds two substances: one an anaphylactin that stimulates the body cells so that the next injection is broken up, separating a highly poisonous substance. Vaughan, who has done work specially with the white of the egg, says that the primary injection educates the cells to break up the substance rapidly and thus poison the animal. The symptoms are due to some paralysis or interference with the respiratory center. Gay and Southard state that the cause of death is emphysema; that the hemorrhages often found in the stomach and brain and other organs after the secondary injection are the immediate cause of death; and that these hemorrhages come from rapid fatty degeneration, which they say occurs in three or four minutes. Death does not always follow. If instead of giving a small dose and allowing nine days or more to elapse, the large doses are repeated at short intervals, the animals become immune, but not absolutely immune, for the second dose frequently causes slight symptoms. Immunity has been transmitted through the mother, not through the milk; it has not been shown, however, to extend beyond the first generation. The sudden death which sometimes follows in man after injection of horse serum has something to do with the phenomenon of anaphylaxis. Just how it works out no one knows, but the symptoms reported resemble the symptoms which the sensitized guinea-pig shows. This condition of sensitization may be brought about even by feeding horse meat. Ordinarily the rash comes on after the eighth or tenth day following the use of antitoxin in diphtheria. Children develop the rash within twenty-four hours after being given the second injection. It has been called the accelerated reaction. The fact that some people die after an injection of horse serum is no reason for restricting its use. Asthmatics are highly susceptible to horse serum. Some care should be taken in making the injection. To a patient in whom the danger of the development of the symptom-complex is suspected, it is better to give the serum in broken doses. Injection should never be made directly into the blood vessel. There is no other treatment of the serum disease than stimulation for the respiratory symptoms. Very few patients recover.

Investigation of Diseases of the Esophagus

DR. C. M. COOPER, San Francisco: I advocate the orderly investigation of diseases of the esophagus by the following scheme: Clinical examination; laryngoscopic examination; hypopharyngoscopic examination; examination with the *x*-ray; examination with sounds; examination with the esophagoscope.

DISCUSSION

DR. E. C. SEWALL, San Francisco: In the beginning Kerstein found that he was able to pass a tube in about three-fourths of his cases. Killian's work, however, has demonstrated that the instrument can be introduced in all persons without anatomic abnormalities. The difficulty in passing the tube into the esophagus is encountered at the upper end and just beyond the cricoid cartilage. This is the narrowest part of the esophagus, and when the head is thrown back the narrowness is exaggerated by the pressure of the parts in front. Pressure is liable to be brought to bear and damage may be done her, especially if diseased conditions, such as carcinoma or diverticula, exist. Mikulicz has reported two deaths following rupture in passing the tube when there was a high-seated carcinoma. The early diagnosis of carcinoma is of so much importance that the value of the examination of the upper end of the esophagus is especially apparent. It remained for von Eicken to give us the best method for examining this hypopharyngeal region. One method is to pull the parts forward by grasping from the outside, using the laryngeal mirror. This is a difficult procedure, except when the patient is thin and the parts relaxed. Best has devised a blunt-pointed retractor which he introduces into the cocainized larynx. By making traction the parts are drawn forward and a view may be had of the hypopharynx. By this method I have recently been able to diagnose tuberculosis of the upper end of the esophagus when the laryngeal mirror showed nothing but pallor of the parts and paralysis of a cord. In tonsil work in removing the blood from the pharynx I have used an aspiration pump, which is equally efficacious in withdrawing the secretion in using the esophageal tubes. It is an extra heavy suction pipe to be screwed on an ordinary faucet and operated in connection with an exhaust bottle.

DR. W. F. CHENEY, San Francisco: I think that the esophagoscope is very disagreeable to patients. In one case at the Cooper Medical Clinic a man was so terrified that he has never come near the clinic since. If we can get evidence of the disease without using this instrument I think that is sufficient. Little is gained by using it.

DR. W. I. TERRY, San Francisco: I take issue with the statement that carcinoma of the esophagus is incurable. Gluck has cured esophageal carcinoma involving the neck, the cures lasting many years.

DR. H. B. REYNOLDS, San Francisco: In diseases of the esophagus reflex spasm is often an important factor. In some cases in which dilatation results from the reflex spasm I believe that the source of the spasm can be found and corrected. About a year ago I had under my care a man who had had difficulty in swallowing for four or five years. He was brought to me for operation for appendicitis. Up to that time he had been unable to swallow any solid food and only took liquids, his customary maneuver being to take sufficient liquid food to fill up the diverticulum and then to swallow pulpy food. I operated on this man for recurrent appendicitis, extending over a period of a number of years. I found the whole ascending colon covered with adhesions, which I removed as far as possible. Since that time he has been able to take the ordinary diet of a normal individual except on occasions when he has a partial recurrence of spasm. This experience has emphasized the possibility of finding conditions outside of the esophagus causing reflex spasm and dilatation when we may not really expect to find them, and the importance of adding to the scheme of Dr. Cooper the careful search for possible reflex causes of spasm, the correction of which may help the patient.

DR. C. G. LEVISON, San Francisco: One point must interest every one who has had any experience with this class of patients; that is the determination of the situation of the constriction by bismuth and the radiograph. This observation is of importance because it gives one a feeling of confidence when instruments are introduced. The introduction of the esophagoscope is painful, and the patient will permit this procedure to be repeated only after he has reached a point where he is unable to swallow, and by this time no difficulty is experienced in making a diagnosis without the use of the instrument. I introduce the esophagoscope with the patient reclining. In the use of the instrument we have several factors to contend with, such as bad teeth or a stiff vertebral column. The latter is a point of considerable importance which presents itself frequently in elderly people, and it is they who so frequently require the application of the tube. With an anchylosed vertebral column the patient experiences great difficulty in flexing the head sufficiently to render possible the introduction of a rigid instrument. With the patient lying on the back my experience has been that this becomes much easier.

DR. HERBERT MOFFITT, San Francisco: I have had experience with esophagus work and can emphasize the necessity of getting through the routine examination before passing the tube, but I can not agree that the esophagoscope is such a dreadful instrument. I have patients who are coming back to me right along, and I do not find it necessary to give a general anesthetic. There are conditions which can be reached therapeutically only by the use of the esophagoscope. A boy of 16 was unable to swallow solid food for thirteen years; on investigation an ulcer was found in the lower portion of the esophagus. Taking this ulcer in connection with evidence of specific disease elsewhere, I applied specific therapy; the result was a complete cure of the condition. The same thing occurred in a smaller boy who had a constriction, chiefly spasmodic, with a very small scar, following the taking of potassium hydrate. After complete dilatation and painting of the esophagus, that boy has become perfectly well. Another case brings to mind the necessity of noting thoroughly the position of a stricture before any violent effort is made to get past it. A woman for fourteen years had had symptoms almost typical of spasmodic stricture at the cardia with evident dilatation above. As in all these cases, the symptoms got worse and the patient was finally unable to swallow enough food. She came to the hospital, and on careful examination no evidence of any other condition was found. With the esophagoscope the dilatation was readily seen; there was evidence of inflammation at the lower section, but no evidence of anything within the esophagus itself. A few hours after examination the patient was given food and after swallowing experienced sudden pain in the abdomen. Perforation had occurred. This woman had a silent ulcer of the stomach with no symptoms. Dr. Cooper has mentioned in connection with these cases the fact that symptoms may be entirely esophageal. Dr. W. S. Thorne operated on a patient who referred all the trouble to the upper end of the esophagus and a constriction had been found there. The esophagoscope found the gullet free; there was no constriction except at the cardia, and gastrotomy done by Dr. Thorne showed the carcinoma wholly within the stomach. The importance of investigating the pharynx before the indiscriminate passage of sounds was emphasized in the late case of an old man with symptoms dating back about ten months, chiefly emaciation and dysphagia. Carcinoma of the esophagus was suspected, tubes had been passed and obstruction found opposite the bifurcation of the trachea. Sounds had been passed and milk was poured through the tube to prolong life. Only one attempt to inspect the esophagus was made, and it became apparent that the trouble was not at the bifurcation, but that the patient had a malignant growth in the upper esophagus; the epiglottis was infiltrated; the larynx was gaping, and the milk that had been fed him had gone entirely into the trachea. This patient died shortly afterward from bronchopneumonia, and autopsy showed a growth at cricoid with infiltration and an extremely wide-open larynx. I think that Dr. Cooper and I saw the case some years ago that Dr. Reynolds has mentioned. A thorough examination was made clinically and with the *x* ray, and we concluded that the patient had not only a diverticulum, but a spasm of the cardia with dilated esophagus. It has been observed that operation elsewhere will relieve spasms of the cardia just as they will relieve spasms of the pylorus. It is well known that a number of patients are operated on for gastric disease whose trouble is entirely below the stomach; that pyloric spasm has been due to irritation elsewhere in the gastrointestinal tract, and that just as appendicectomy will relieve these patients so occasionally cardiospasm will be relieved by operations elsewhere. As a rule, however, the relief is rather transient. Some years ago I saw a man who had the appendix removed for the relief of the cardio spasm but the spasm returned. Later he died of an infection of the mediastinum through an ulceration of the large esophageal pouch.

A Case of Glanders in Man

DR. G. CAGLIERI, San Francisco: On Sept. 6, 1908, I saw the patient, an Italian, age 30, living in San Joaquin Valley, where he had been working among horses. He complained of pain beneath the lower tuberosity of the left tibia. His temperature was 103F. he had no history of syphilis or tuberculosis, he had had typhoid four years ago. There was no history of traumatism. The pain increased and edema developed in the skin, with rising temperature. Two days later developed pain in the left elbow and later in the shaft of the radius. These areas became red and swollen and tender in twenty-four hours, and distinct fluctuation was present. The swellings over the elbow and knees were opened but no pus was obtained. From the swelling over the radius considerable pus was removed by incision, and from the knee joint by aspiration. A diagnosis of pyemia was made but by staining smears no pus organisms were found. The next morning the patient presented a typical picture of human glanders and smears and cultures from fluid aspirated from the lesions showed the characteristic organisms. At this time the patient became much worse; the elbow was four times its normal size; the skin was edematous and fiery red; the forehead was red and there was a profuse ichorous secretion from the nose. The man died on the tenth day. On the day before death he developed a rash over the whole body which looked much like smallpox and on the morning of his death the right submaxillary gland became swollen. When the case was first seen it presented the picture of periostitis, and later of pyemia. It is necessary to bear in mind rare conditions so that they may be recognized when seen. The case would not have been so difficult of diagnosis if the true condition had been thought of.

DISCUSSION

DR. W. F. CHENEY, San Francisco: I saw a case of glanders in a human being in 1904 to which I called the attention of the state society in 1905. At that time I went thoroughly through the literature: only five cases had been reported in California, two of which had been reported by Dr. Tait. The disease must be rather common throughout the state and yet few cases have been reported. Whenever a case is identified it ought to be put on record so that more attention may be called to it. Since I saw that case in 1904 I have been on the lookout for others but have not seen one.

DR. THOMAS H. O'CONNOR, San Francisco: In the case reported by Dr. Caglieri the leucocyte count was very low. The first time it was taken it was 9,000; at another time it was 8,000. The blood count showed, of course, a relative increase in the polymorphonuclear leucocytes. In looking over the literature I find that various writers have noted and emphasized the low leucocyte count in cases of human glanders. In my opinion, this was a case of latent glanders with encapsulated nodules. This man stated that he had not worked with horses for two years, but that before that time had been employed in a capacity which brought him into close contact with them.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-first Annual Session, held in St. Louis, Dec. 15-17, 1908

(*Continued from page 163*)

Elective Cesarean Section

DR. MILES F. PORTER, Fort Wayne, discussed Cesarean section as an operation of choice, especially in such patients as are usually delivered by so-called minor operations or by unaided natural forces after long labor. Heretofore too little attention has been paid to the morbidity of both mother and child. He said:

The question is not only one of motherless children and childless mothers, but of invalid mothers and idiot children as well. A study of the statistics shows that the average maternal mortality resulting from high forceps, version, induction of premature labor, and the expectant plan is 1.14 per cent.; the fetal mortality, 17.3 + per cent.; the maternal morbidity, 42 per cent.; the fetal morbidity 12.2 per cent.; not including the fractures of the skull in Leisenwitz' figures. It should be recalled that the children who recover from cerebral hemorrhage invariably suffer permanent disability, and in 30 per cent. epilepsy develops. Summarizing the reports of 126 elective Cesarean sections collected by personal correspondence, the maternal mortality is found to be 1.58 per cent.; the fetal mortality, 0; the maternal morbidity, 12.69; the fetal morbidity, 0. It should not be forgotten that the fetal morbidity following forceps, etc., is often worse than death. The results of these cases are in accord with the opinions of many men of experience. In placenta prævia the obstetric procedures result in a maternal mortality of 8 per cent., a fetal mortality of over 50 per cent.; and a high morbidity for both mother and child. No method of delivery entails so little risk to the child as does Cesarean section. Remote ulterior results of Cesarean section, including hernia, rupture of the uterus, and adhesions, can be prevented by proper technic so nearly completely as to render the dangers arising therefrom practically *nil*. Barring infection, some hours of labor do not increase the danger from Cesarean section. The obstetric operations no less than Cesarean section require surgical skill and judgment; indeed, the inherent difficulties of the former are perhaps the greater and no one, unless he be possessed of both skill and judgment, should undertake either. In contracted pelvis, Cesarean section should be the operation of choice in many multipara and practically all primipara. In placenta prævia with a viable child Cesarean section should be the operation of choice. In eclampsia in the primipara, with a viable child, Cesarean section is the best method of delivery usually. With capacious pelvis and vagina, Dührssen's operation may be preferred. Abdominal section for uterine or ovarian tumors done at term should be followed by delivery of the child by Cesarean section. Given an elderly primipara at term with a vigorous child, with a normal pelvis, but rigid soft parts, unusually sensitive to pain and physically below par, and Cesarean section offers both mother and child a better chance of life and health than the so-called conservative operations. As one of the chief arguments in favor of Cesarean section is that it entails no risk to the child, it follows that a dead or dying child will often determine one to choose one of the conservative operations in cases in which the Cesarean section otherwise would be the operation of choice.

DISCUSSION

DR. E. GUSTAV ZINKE, Cincinnati: If I were to make any criticism on Dr. Smythe's paper, it would be that Cesarean section, and especially a Porro operation, under the circumstances, was unnecessary, and in so saying I do not wish to be understood as reflecting on his ability or judgment. As I understand the case, there was an ample pelvis. The only pathologic condition was the presence of a large ovarian tumor on one side and a small one on the other. The large one was removed without difficulty, and the second one could likewise have been removed, the abdomen closed. Judging from recent literature, Cesarean section will soon cease to be an elective operation, and will only be performed when there are positive indications.

DR. HENRY T. BYFORD, Chicago: It is rather radical to recommend Cesarean section in old primiparæ. There are exceptional cases in which this operation might be done: but obstetrics is improving, and a good obstetrician, by using the various means at our command, can almost rule out Cesarean section in that class of cases. It is only in the exceptional cases we should resort to such an operation.

DR. CHARLES P. NOBLE, Philadelphia: I am heartily in sympathy with that part of the paper which speaks of broadening the field of Cesarean section. The question is, Which is the more dangerous to the child—an elective Cesarean section or a very difficult forceps operation? Surely, anyone who has had considerable experience in obstetrics, and who knows the great difficulty attending deliveries either by forceps or version under ordinary conditions existing in private practice, as well as what can be done by abdominal surgery under favorable conditions, must be driven to the conclusion, even on *a priori* grounds, that Cesarean section is much safer. The mortality to the mother approaches zero, and about 100 per cent. of the children are delivered alive by Cesarean section.

DR. MAURICE H. RICHARDSON, Boston: Unless fibroid tumors interfere seriously with normal confinement, I would not operate, and the results from non-interference are, in my experience, very good indeed. Nature is very kind in the delivery of a child from a uterus which contains fibroids.

DR. CHARLES H. MAYO, Rochester, Minn.: I recall two cases of tumors complicating pregnancy in which an elective Cesarean section was planned, but in both instances by manipulation the tumors were lifted out of the pelvis and the women went on to term and were delivered normally.

DR. RUFUS B. HALL, Cincinnati: A woman, aged 40, about to be delivered, came to me with a gallon or more of fluid in the abdomen. She had been ill two days. I operated on her as soon as she came in. I found an ovarian tumor about the size of a cocoanut, with twisted pedicle. I removed this tumor, but did not interfere with the pregnancy. The woman recovered nicely from this operation. On the thirteenth day thereafter she was delivered of a baby, and made a smooth convalescence.

DR. CHARLES L. BONIFIELD, Cincinnati: I have done but one Cesarean section myself, but assisted Dr. Zinke in another, and in both instances I was impressed with the exceeding ease of the operation. It is one of the simplest operations in abdominal surgery, gives rise to the least trouble, and in healthy women I would not expect a mortality of more than 1 per cent. When the uterus is infected,

a Porro operation is the operation of choice, but when the uterus is healthy, I see no reason for resorting to a Porro operation instead of the ordinary Cesarean section.

DR. WILLIAM D. HAGGARD, Nashville: There is one conclusion Dr. Porter arrived at in which we can heartily concur, namely, the wisdom of resorting to elective Cesarean section in cases of eclampsia at term, but not in labor. I have had occasion to do this operation twice in the last year in women who had been having a number of convulsions, one for eight hours and one for nine hours, both being in a comatose condition before they had the convulsions. Both were delivered by Cesarean section, and both mothers and children are alive.

DR. WALTER C. G. KIRCHNER, St. Louis: I recall one case in which pregnancy was complicated by a cyst. The cyst was removed, and the patient recovered from this operation. A few months later she developed perforative appendicitis, was operated on for that condition, recovered, and went on and was delivered of a healthy child.

DR. M. C. MCGANNON, Nashville: I am in accord with what has been said relative to broadening the field for Cesarean section, because it is probably one of the simplest abdominal operations in the hands of an expert. The mortality rate is practically *nil* so far as the mother is concerned, and it gives the child, under all circumstances, the best chance for its life.

Necessity of a Second Operation for Removal of the Appendix When an Appendiceal Abscess Has Been Treated by Simple Incision and Drainage

DR. STUART MCGUIRE, Richmond, Va.: Among the cases reported in a former article, entitled "An Analysis of the Last Five Hunderd Cases of Appendicitis Operated on at St. Luke's Hospital," there were 23 cases of appendiceal abscess of the class adherent to the parietal peritoneum. In this group of cases the treatment had been simple incision and drainage, no effort being made to locate or remove the diseased appendix. In every instance the patients were told that the operation was not for appendicitis, but for an abscess which was the result of appendicitis, and that the appendix had not been removed. Two methods of investigation were followed: First, the opinions and practice of a number of eminent surgeons were obtained; and, second, the twenty-three patients whose cases were reported were written to and their subsequent histories ascertained. From the two lines of investigation the following conclusions may be drawn: While a surgeon may be justified in advising a secondary operation in all cases as theoretically the safest plan to follow, he is not justified in persuading, urging or starving a patient until he consents to have it done. The appendix should always be removed at the first operation if the abscess is small and not adherent to the abdominal wall beneath the incision. It should be left only in neglected cases in which the abscess is large and attached to the parietal peritoneum. When this condition exists, the appendix is usually gangrenous, undergoes liquefaction and is eliminated with the discharges. In such cases suppuration continues as a rule for several weeks, and before a secondary operation could safely be done the patient is homesick, weakened physically by confinement, and depleted financially by the expenses incident to his stay in the hospital. Experience seems to show that if subsequent trouble develops, the infection is not usually acute, and pus, if it is not formed, is walled in by old adhesions. Therefore, the surgeon does his duty if he makes it clear to the patient that, owing to the complications which existed, it was not found safe to remove the appendix, and tells him that while a second operation is advisable, it is not imperative unless he has tenderness over the incision, colicky pains in the bowels, or persistent digestive disturbances, in any of which instances it is distinctly necessary for him to promptly seek surgical assistance.

DISCUSSION

DR. LE GRAND GUERRY, Columbia, S. C.: In a series of nearly 500 appendix cases in the last three or four years, I have had 175 in which there was a localized abscess of the appendix. Of these 175 cases, for various reasons, the appendix was left behind in 30 instances. Out of 30 cases in which the appendix was left, 5 patients were subsequently operated on, and the appendix removed on account of the reformation of an abscess, and one was operated on for a persistent fistula which led down beside the appendix. Three other patients have had their appendices removed by advice, although they did not have any particular trouble with them.

DR. MAURICE H. RICHARDSON, Boston: If we take the trouble to collect the pus in a basin, we will find a floating appendix in some of these cases. I have seen this so many times that I am prompted to say, those surgeons who advise universally the removal of the appendix at a second operation will not find any appendix to be taken out in many instances. I take it, once the appendix is diseased, it is always diseased, unless it is cast off in old abscesses, and, of course, we all remove the appendix unless there is an abscess one or two weeks old, and the man who tries to take out the appendix every time will get in trouble.

The subject was further discussed by Drs. R. S. Hill, W. P. Carr, C. P. Noble, R. Winslow, E. H. Ochsner, C. H. Mayo, J. B. Murphy, R. M. Cunningham, all of whom agreed that in certain cases it is better to deal with the abscess at the primary operation and leave the removal of the appendix for a subsequent operation.

Resection of the Bowel, with Report of Eleven Cases

DR. J. SHELTON HORSLEY, Richmond, Va.: In order to have satisfactory union there must not only be approximation of the serous coats of the bowel, but a mild degree of pressure as well, and this pressure must be uniform along the line of sutures. Experiments show that mere approximation of the peritoneal coat in dogs does not always secure union. In resecting the bowel, I first divide the mesenteric border and clamp and ligate this area before opening the lumen of the bowel. Union is made by a continuous suture inserted in the following manner: Starting about one inch from the mesenteric border, a mattress suture is inserted, so that the knot is on the mucous membrane in the manner advocated by Connell. The short end of this suture is clamped and the needle with the long end makes a continuous mattress suture toward the mesentery. After one-third of the bowel is approximated in this manner, the needle is brought through on to the peritoneal surface and the rest of the union is effected by a continuous right-angle suture penetrating all coats. When the point where the original knot was tied is reached, the suture is terminated by tying the thread to the short end of this knot. This makes it practically one knot for the whole line of sutures and brings this knot within the lumen. In eleven cases there was only one death. This was in a patient with strangulated hernia who had been a chronic alcoholic for years. The postmortem showed no sign of leakage or peritoneal inflammation. Death was evidently due to suppression of the liver and kidney functions. There were twelve resections in the eleven cases, as in one patient a double resection was necessary. The operations included five resections in four patients for strangulated hernia, one for gangrene from a band, one for volvulus of the sigmoid, two for malignant disease of the large intestine, one for tuberculosis of the cecum, and two for damaged intestine during pelvic operations.

Obstruction of the Bowels

DR. T. C. WITHERSPOON, Butte, Mont.: After reflecting on the results I have obtained in 38 cases (with 7 deaths) of bowel obstruction, I am prepared to go to less extreme measures to bring about relief than formerly. Most surgeons are inclined to look too much to the mechanical side of the problem at the neglect of the physiologic. Even in strangulation by a hernial ring, the lumen of the bowel loop caught in the hernia does not suffer from complete closure, but rather there is vascular obstruction. The bowel shut-off is as complete when its coat dies from a thrombotic process as when

caught in a hernial ring. The real obstruction is one of function and not of pure mechanics. The danger to the patient arises from toxic absorption proximal to the infunctionate segment. With this in view, I have formulated for the principle of bowel drainage. The method of obtaining this may vary as the conditions vary, but it is the part of wisdom never to tax the patient's strength by long procedures except in a few instances, such as a Meckel's diverticulum strangulation. If the condition is due to a band, invagination, hernia, etc., which admit of easy remedying, apply the method, but if the case is one of uncertainty or one which necessitates an exhaustive and dangerous procedure, it is better to let out the proximal bowel contents by an artificial opening until the general toxic state is much improved, when a more radical measure may be adopted to bring permanent relief. Inflammatory obstructions clear up beautifully when the loop proximal to the involved segment is drained. Neoplastic or granulomatous processes may be readily handled after sufficient drainage is given the bowel above the lesion. The danger lies in attempting a complete procedure at the one time. A simple local anesthetic opening will suffice to bring about relief from sufferings, physical and toxic. In a week the anastomosis becomes a matter of simple surgery. In one of my patients, a child of 12, obstruction became complete nearly three weeks after an operation for general peritonitis. I opened the abdomen only to find a conglomeration of bowel loops, the unraveling of which probably would have caused death. I selected a portion of bowel which was proximal to the obstruction, and which, at the same time, seemed to be the most distal distended loop from the stomach, and drained it through a large rubber tube. In less than two weeks the fecal movements were passing again by the natural route and the artificial opening was allowed to close.

Some Rare Forms of Hematoma

DR. J. GARLAND SHERRILL, Louisville, Ky.: Three cases of hematoma presented symptoms somewhat in common and extending beyond the usual time which these conditions last, one having existed more than ten years, and each of them continuing to increase in size from the beginning. The following hypotheses are offered as possibilities in explanation of this condition: 1. The blood might flow through a sac returning into the vessel and remain fluid, at least in part, just as is the case in aneurism. This proposition would seem to be fallacious because these hemorrhages are probably venous, and the tendency of a vein is to collapse immediately on injury; and, moreover, no such patent vein has been noted in any of these cases. 2. The cellular tissues possess the power of secreting a substance which tends to prevent coagulation. This seems clearly refuted because the infrequency of the occurrence of persistent hematoma would appear to prove the lack of such power of secretion. 3. Slight infection present, in insufficient amount to produce suppuration, results in such change that the blood can not be taken up by the absorbent vessels. This theory seems to be irreconcilable to the facts in the case, for effused blood has but little power of resistance, and any culture of bacteria should find here an excellent pabulum, and suppuration would be inevitable. 4. The tissues about a hematoma may be so dense or so compressed that the absorbent vessels would be occluded or obliterated, thus preventing the accomplishment of their normal functions. This proposition seems to have a more probable foundation in fact, although not accounting fully for the phenomena. 5. Coagulation takes place, but when disintegration occurs the blood remains fluid, but is not absorbable. This contention seems also within the range of probability. 6. The constant escape of fresh blood occurs in a quantity more than sufficient to make up for the loss in volume from absorption. In proof of this I believe that it can be demonstrated that the escape of fluid into a hematoma does occur, as is shown in my cases, in which the tumor increased in size steadily. In one the bleeding occurred from a wounded vessel in the femur; in another the source of the blood could not be discovered, but I thought that it came from a small vein. There is also the possibility of blood being manufactured inside the sac, as in the case of the development of the circulatory apparatus in the embryo, although it seems highly improbable that this could occur in adult life. From the evidence at hand, I conclude that the tissues about a hematoma from pressure lose their power of absorption; that even though coagulation and disintegration occur, resorption does not result, and that in some instances there is a continual addition to the amount of blood in the sac by an outflux from the damaged vessel.

Surgical Treatment of Exophthalmic Goiter

DR. JOHN R. WATHEN, Louisville, Ky.: Preliminary ligation of the superior thyroid artery on one or both sides has not only better prepared the patient to withstand the more severe shock of thyroidectomy, but has also greatly reduced the size of the tumor in the otherwise hopeless cases, and I have had occasion to employ to great advantage this method in several bad cases. In the preparation of the patient for operation, I have tried almost every remedy usually recommended to reduce the pulse and better the condition, but none has yielded such good results as absolute rest in bed and tincture of strophanthus. It is that class of cases in which no preliminary treatment seems to be able to make much temporary reduction, which are especially dangerous. These patients usually have an irregular pulse, a degenerated heart muscle, low blood pressure in contradistinction to the majority, who have often very much increased blood pressure, albumin in the urine, or enlargement and fatty degeneration of the liver. Aside from the proper selection and preparation of the patient, the most important thing is a rapid and safe technic, suitable to the average surgeon, and not a variety of complicated methods. The technic employed in my last fifteen cases has been a slight departure from that usually recommended. With the head elevated in the reverse Trendelenburg position, and a large sand pillow under the shoulders and neck, the skin is grasped with two pairs of Jacobs' volsella forceps in the median line and traction made upward. With the Mayo blunt-pointed scissors, instead of a knife, the skin and platysma muscle are incised, then with constant upward traction the incision is continued around the neck as far as necessary, using the scissors without in any way injuring the deeper structures. Next are ligated the anterior veins and the ribbon muscles of the neck severed high up and retracted, then the capsule opened, and the tumor grasped with a stout pair of large volsella forceps, and traction made in an upward and opposite direction. This allows the operator to wipe off the capsule of the gland with a piece of gauze, and place the arteries and the veins to be ligated on the stretch. Forceps should always be used to clamp rapidly, and these can be placed close on the tumor and ligated later with catgut after the complete enucleation. The isthmus is clamped with a large pair of forceps and cut V-shaped, parallel with the clamp, so the raw edges can be turned inward by whipping over with catgut, instead of the usual method of carbolic acid cautery and alcohol, or Harrington's solution. The wound should be washed out with hot saline solution, and closed with a subcuticular catgut suture. Drainage through a lower stab wound with large open rubber tube, instead of gauze or a cigarette drain, should complete the operation.

Fibroid Tumors and Pregnancy

DR. CHARLES L. BONIFIELD, Cincinnati: Fibroid tumors of the uterus are said to be the penalty a woman pays for celibacy. All observers agree that they are much oftener seen in women who have not borne children than in those who have, and we can safely say that sterility predisposes to fibroids and fibroids predispose to sterility. Fibroid tumors have a tendency to render women sterile in three ways: First, the hypertrophic endometritis they produce renders the endometrium unfit to receive and nourish the ovum. The nearer the fibroid is to the endometrium, the more marked its effect on this membrane. Second, they are frequently complicated by and apparently cause disease of the appendages, which prevents conception. Third, they may so dis-

place the cervix that it is not bathed in seminal fluid during the sexual act. But as a fibroid may exist without producing any of these conditions, and as pregnancy may occur in spite of the presence of one or more of them, the coexistence of fibroid tumors and pregnancy is not rare. It is probably more frequent now than formerly, for women are marrying later in life and thus putting off child-bearing until they have reached the age when fibroids are prone to develop. Pregnancy by the physiologic hyperemia of the uterus to which it gives rise usually causes fibroids to grow rapidly. During the process of involution, following the normal termination of pregnancy, fibroids may decrease in size perceptibly. Cases have been reported in which they have disappeared entirely. Fibroids may have no effect on pregnancy, or may give rise to most serious complications. Submucous fibroids may cause premature expulsion of the ovum. If a fibroid has developed between the folds of the broad ligament, it may prevent the uterus rising into the abdomen as pregnancy advances, and give rise to symptoms so severe as to demand immediate surgical relief. A fibroid springing from the lower part of the uterus may so fill the pelvis as to prevent the passage of the child, either prematurely or at term. Subperitoneal or interstitial fibroids that are interfering with pregnancy or promise to interfere seriously with delivery may be removed by myomectomy. Numerous cases have been reported in which the operation has been done successfully without interruption of pregnancy. Only one such case has come under my observation. Myomectomy should usually be limited to those cases in which the tumors are not numerous and are easily accessible. In spite of the reported cases of myomectomy, one can not expect the uterus to withstand too much traumatism without rebelling.

Vaginal Hysterectomy for Carcinoma of the Cervix

DR. HENRY T. BYFORD, Chicago: The relative value of the vaginal and abdominal routes is still under discussion. The advocates of the abdominal route are inclined to be less radical than its propounder, Emil Ries, in order to diminish its excessive mortality; while some of the German operators in their attempts to be more radical are increasing the dangers of the vaginal method by splitting the vagina and opening freely into the plevic connective tissue. I am satisfied that the permanent results may be improved sufficiently to give the operation an important place in the future, and propose a method of causing sloughing of the broad ligaments by the combined use of silk ligatures and strong forceps. In this way much more of the connective tissue in the broad ligament and about the cervix can be removed than by either ligatures or forceps, as ordinarily employed. The essential part of the method consists in ligating the broad and sacrouterine ligaments as far from the cervix as possible after having pushed the ureters out of the way. After the uterus has been removed, the broad ligaments are pulled still farther down and strong forceps are applied still farther away, and clamped so as to cause sloughing of all tissue within their grasp.

Dr. Byford exhibited a pair of forceps which he has devised, believing it obviates some of the objections that are found in the ordinary broad ligament forceps.

Abdominal Aneurism

DR. MURAT WILLIS, Richmond, Va.: A critical study of 21 cases thus far reported leads to the conclusion that so far surgery offers no certain relief for this malady. Of these 21 patients, the subsequent history of 3 is not recorded; in the remaining 18 death ensued in every case. The duration of life after operation in this series varies from one hour to nine months, with an average duration of less than fifty days. The operative technic, as developed for this condition, would seem to be absolutely perfect and based on sound surgical principles, but the fact remains that this method of treatment is disappointing, and the last word has not yet been said concerning the surgical treatment of abdominal aneurism.

Surgery of the Pleura

DR. JOHN B. MURPHY, Chicago: Pneumothorax is not so dangerous a condition as we have been led to believe. In discussing lesions of the pleura, we must consider first the primary infective, perforative lesions, which demand prompt and immediate action; second, chronic indurated lesions, which call for masterly inactivity, so far as operations are concerned. In the first class of cases the use of the exploring needle between the ribs will usually afford relief; but incision will give these patients immediate relief. Aspiration does not cure chronic conditions of the pleura. According to statistics, of 1,000 patients treated by simple aspiration, only 2 cures were reported. In the suppurative types of infection of the pleura, absorption of the toxic products can be stopped, sterilization of the fluid effected, and the necessity for opening the chest avoided. A number of agents have been used for this purpose. Perchlorid of mercury has been used with success. Formalin, which has little or no toxic effect, has great sterilizing power. I have used it in cases of excessive hydrops, where a lung would be compressed, and with almost one injection the secretion was stopped. Pus cases are not cured with one injection, except in children. In the other variety of cases, in which there is a dense, firm mass of cicatricial tissue, which will not contract, we have a different condition. We have tissue which will remain for years without absorption, because many times it has large deposits of calcium salt in it and can not collapse. In these cases we can make use of the same injections, but we must give them more slowly. Injection of 2 per cent. solution formalin and petrolatum sterilizes the fluid contents and prepares it for absorption, and finally, in six months thereafter we will have a sanguinolent fluid, and in twelve months the patient is practically well, without any tube in his side.

Splenectomy for Splenomegaly of Doubtful Classification

DR. M. C. MCGANNON, Nashville, Tenn.: The case which I desire to report has some unusual features, not heretofore recorded in connection with primary splenomegaly. Patient is a white woman, aged 43. Chronicity is doubtful, since the patient first noticed the enlargement of the spleen only a few months before she came under my observation. Her physical condition has been below par for a year or two; but preceding an attack of pneumonia, which was four months before she discovered the splenic enlargement, she had not considered herself in any sense a sick woman. Anemia, hematemesis, jaundice, liver enlargement, all terminal symptoms, might have arisen later had the disease been permitted to continue. The most marked unusual features of the case are the general enlargement of the superficial lymph nodes and the myxedematous symptoms; thickened, puffy skin and mental hebetude, with complete disappearance of all symptoms and pathologic conditions in other tissues after the removal of the spleen.

Relation of Surgery to the Neuroses, Especially Neurasthenia

DR. CHARLES M. ROSSER, Dallas, Texas: Surgery is the most definite art with which medicine is concerned, and neurasthenia the most vague of diseases. Writers mention heredity and exercise, but ignore intercurrent causes independent of which, in many cases, physiology would not be disturbed on account of predisposition, and excitation. Neurasthenia in both a psychosis and a physical condition, and may be induced by surgical conditions which disfigure, disable or distress. As physical causes, deformities which may not affect vital functions, but which embarrass sensitive temperaments, are factors. The clinical examination should be as careful as though the symptoms are not exaggerated. The prognosis should be more guarded, but the patient should be denied no opportunity of physical relief on account of nervous and mental conditions, and should be subjected to no procedure that is not justified by clinical findings. Patients should always have the benefit of all doubts that are reasonable.

(To be continued)

Miscellany

The Fable of the Manufacturer Who Wanted What He Paid For

"What is the matter?" asked Dr. Brzezlarzik, professor of the University of Weissnichtwo. "What do you complain of?" he asked affably. The merchant bit his lip. He lifted his brows and contracted them again. At length he spoke:

"Herr Privy Councilor . . . certainly some mistake has occurred."

"What mistake? Well, we will soon put the matter right."

"You probably remember, Herr Privy Councilor, that I called on you a few weeks ago to ask you for a testimonial. Edhoffer is my name."

But Professor Brzezlarzik could not recollect.

"It was about a testimonial, if you please, Herr Privy Councilor. My name is Edhoffer."

"Ah, yes—yes, yes, I know. It was about malt bonbons, was it not?"

"No, pardon me, Herr Privy Councilor, it had nothing to do with bonbons."

"Indeed, excuse me. Some mechanical device, I believe?"

"No, Herr Privy Councilor, it concerned Antipelinon—the best of moth powders. For twelve years we have been producing all kinds of insect powders. We are well known; indeed we are purveyors to Prince Nikola of Montenegro. We have letters of thanks from very many competent persons and from people of note. But, also, one can not publish them, because one does not know whether it will be agreeable to the writers. But now, certain fraudulent firms in the same line have testimonials from heaven knows what obscure assistants and professors. Therefore, I said to myself, "Edhoffer, go to our illustrious Professor Brzezlarzik and ask him to experiment with Antipelinon and to give us a testimonial about it that can be published. So I came here on the day referred to."

"Yes, yes, now I recollect; fourteen days ago was it not."

"Yes, Herr Privy Councilor, and then I brought you six vials and begged you to have the kindness—and then three days ago I sent my messenger here for the testimonial and he put an envelope with 500 crowns—pardon me, I allude to this only as a detail—he put an envelope with 500 crowns on the table," and Herr Edhoffer held out a sheet of paper.

"Well, sir, you received the testimonial, did you not."

"Yes, Professor, but what a testimonial!"

The Privy Councilor put on his *pince-nez* and read:

"*To Anton Edhoffer, Court Purveyor, Weissnichtwo:*—I have made scientific experiments with the insect powder Antipelinon, which has been highly recommended to me, and which gained a gold medal at the Universal Exposition, and have obtained the following results: A brood of fur moths (*Tineada pellionella, L.*) placed in Antipelinon thrived splendidly in a very short time. The caterpillar, which originally is only from six to seven millimeters in length, when nourished with the aforesaid Antipelinon became ten millimeters in length, well developed, and remarkably robust. The caterpillar of the clothes moth (*Tineada sarcitella, L.*) gave even better results. Ordinarily it attains only six to seven millimeters, like the preceding, but when nourished with Antipelinon it produced remarkable examples which measured from the mouth to the last ring of the body 11.05 millimeters. Therefore, I do not hesitate to describe Antipelinon as the best existing insect powder and desire you to send to me six more bottles of the same for my own use. DR. BRZEZLARZIK,
Professor of the Royal and Imperial University."

"Yes, my dear sir, that is manifestly an error, I confess, but whose fault is it? Yours! When a scientist, if you please, is asked to make a scientific experiment he should at least be given his instructions beforehand without confusion: 'Such and such a point is to be proved.' The experiments are then arranged with that end in view and they are invariably successful."

"Excuse me, professor. . . . "

"Now, now, do not get annoyed, my dear sir. As to the testimonial, an assistant prepared it during my absence; but you need not worry over that. I am honorable and always follow the principle that what is unsuitable must be exchanged without demur. Leave your vial here, and I will make a new experiment. In a week I will send you another testimonial which will satisfy you, sir. Rest perfectly assured, you will be satisfied, Herr Court Purveyor. I enter fully into your feelings. I will personally make a new experiment which shall have totally different results. It will be a pleasure to me. *Au revior.*"—Translated from *La Spritulo.*

MORAL: When accumulating testimonials, write them yourself and merely pay for the signature. It saves work for the payee and annoyance for the payer.

The Teaching of Anatomy.—Prof. Franklin P. Mall, professor of anatomy at the Johns Hopkins Medical School, in the *Anatomical Record* (November, 1908, ii, 313) gives his views on the teaching of anatomy to medical students, with a synopsis and description of courses in anatomy offered at Johns Hopkins. The ideas here set forth are in marked contrast to the views recently expounded by British and American medical educators, who favor a more didactic routine method of teaching anatomy (with emphasis on the "essential" points). Professor Mall is more in accord with the German than with the English method of teaching anatomy. He says: "I do not believe the study of human anatomy is of such value [i. e., by far the most important course for medical students], but it has held its own so long, it is so well intrenched in the medical course and in medical literature, and it has been represented by so many great masters during ages that as a discipline and as a foundation it justly occupies the first position." The principle of self-instruction by the students from the cadaver, etc., under guidance of the instructor is considered the most essential part of the course; for thus a student not only becomes most quickly grounded in the subject, but is also afforded an excellent opportunity for discipline toward a critical and scientific point of view, which is essential for the development of scientific medical men. Concentrated courses in anatomy are favored. A student should stick to the study of anatomy until he has become well grounded in the subject or until he has finished the required amount of work in anatomy. Thus a student is able to do his work better and the odd hours between classes are not wasted. Mixing up courses in physiology, etc., in the medical course at the same period of the year with anatomy, he considers a "dissipation of energy." Since the needs of all students are not the same, the course in anatomy should be arranged to meet as nearly as possible the requirements of each. For example, the interest in anatomy of the future surgeon is different from that of the ophthalmologist or of the obstetrician, and the amount of anatomy desired by each would be probably different from that of the practitioner in internal medicine. For these reasons it is thought desirable to have special elective courses, but to require of all students a minimum amount of "gross human anatomy as a practical course," to the teaching of which "the best energies of the anatomic staff should be devoted." The next course in order, which no one will question should be required of all students, is that on practical histology. Every medical student should also be proficient in histology; that is, should be able to use the microscope intelligently in working out animal tissues, especially mammalian and human." In regard to what is practical, there is, of course, a great divergence of opinion, and in regard to the amount of anatomy to be given a student, Professor Mall agrees with Waldyer: "The days still contain but twenty-four hours, and life must still be reckoned by three-score and ten, and there is no evidence that the mind can stand a greater strain than formerly. First and foremost we must ask ourselves what is absolutely necessary for the future physician to study in anatomy and what is of secondary value but still safe." The necessary anatomy he would make obligatory and would examine it, but he would not discontinue courses on the useful subjects of secondary importance, for it is through the study of the latter that the science progresses. These secondary courses should not be made obligatory in any way, by being prescribed or through examination.

The State of the Brain During Hypnosis.—William McDougall (*Brain*, 1908, xxxi, part 122) believes that the more sober way to attack and explain hypnotic phenomena is to approach hypnosis in its simplest forms—to try to explain in the first place those phenomena of hypnosis which closely resemble well-known states of the normal mind, rather than to use as a working hypothesis the theory that hypnosis is a state of "extended faculty and increased mental power," and that its phenomena are supernormal and marvelous. He believes that the hypnotic state is closely allied to the normal sleeping state (as evidenced by the close similarity of the methods and factors which are favorable to the bringing about of the respective states—the withdrawal of all forms of sense-stimuli, the banishment of all exciting or emotional thoughts and the concentration of the attention on some unexciting sense-impression); that "the state of normal sleep may be converted into hypnosis," and *vice versa*, "the transition from one state to another being perfectly gradual, so that no line can be drawn between them," and that each depends on "cerebral dissociation." In cerebral dissociation is implied the hypothesis of the existence in the normal waking state of numerous psychophysical systems of circuits more or less closely connected, which are somewhat comparable to the (physical) reflex arcs of Sherrington. Synapses are present within and between these systems, whose resistance to the passage of sense impressions is normally in inverse proportion to the amount of free nervous potential. Fatigue and anesthetic drugs increase the resistance of these synapses so that each of the many systems is more or less completely isolated or dissociated from the others and each within itself. In normal sleep the cerebral dissociation is relative. In hypnosis cerebral dissociation is complete with most of the systems; a few, however, remain normal. These latter are under control of the "operator," since normally it is only by the interaction to an impression of all our psychophysical systems (many of which are inhibitory to one another for preponderance of an idea) that we are able to form a well-balanced conclusion. Now, when, in hypnosis, the few psychophysical systems which are not dissociated receive impressions from the operator they react directly, without the restraining influence of the dissociated systems (and hence without question), and with the entire potential of the neuropsychic apparatus. "If these views represent an approximation toward the truth, it follows that the therapeutic value of hypnotic suggestion consists principally in the fact that it is a means of concentrating powerful currents of nervous energy in any required direction and of withdrawing them from other parts. By thus withdrawing the nervous currents from an overworked or unduly irritable nervous center or bodily organ, and by isolating it through induction of a relative dissociation of the center, rest may be secured and a bad habit of overaction may be suspended, as e. g., in neuralgia," and *vice versa*.

Improved Powder Vehicle for Dermatology.—Unna devotes a large part of the *Monatshefte für praktische Dermatologie*, October 1, to a discussion of the advantages of using as a vehicle a powder which is very mobile, like lycopodium. This is used in casting metals, interposed between the sand cast and the molten metal, and it allows the moist sand mold to be lifted up from the model without the least loss of its finest relief. Nothing else has been found to date with the same properties, that is, the elasticity of the single grains, their regular size, the slight friction between them, their non-absorbence of moisture and the large proportion of air in the interstices. Unna describes researches which show that these same properties are of great importance in dermatology. Such very mobile powders (*Gleitpuder*) form a regular, even and adherent coating, far superior to the clump-forming powders hitherto in use, especially in a flesh tint for the face and hands. He gives a number of formulas for ointments and pastes, stating that, besides the natural lycopodium powder, an artificial very mobile powder can be made by mixing 98 parts potato starch with 1 part carnauba wax and 1 part light magnesium carbonate. A good formula for a healing, flesh-colored powder is as follows: 89 parts potato starch; 10 parts zinc oxid and 1 part carnauba wax, mixing and adding 5 parts each of a 1 per cent. solution of ichthyol and of eosin. Another formula is 5 parts of zinc oxid and 95 parts lycopodium, adding 10 parts of a 1 per cent. solution of eosin.

Sudden and Complete Loss of Vision in One Eye Without Evidence of Anatomic Changes.—E. L. Meierhof (*New York Eye and Ear Infirmary Reports*, July, 1908, xiii, 74) reports the case of a widow, aged 30, who found on arising, a complete loss of vision in the left eye. The examination of the left eye showed a widely dilated pupil with normal tension. The position of the eye was somewhat divergent; there was no pupillary reaction to strong artificial light directly, nor was the pupil of the unaffected eye affected by the light stimulus on the affected eye. The refractive media were entirely clear. Examination of the fundus failed to reveal anything pathologic. Examination of the nose showed a mucopurulent discharge, which might have come from the sphenoidal sinus. Meierhof believes that the blindness was due to disease either in the ethmoidal or sphenoidal sinus. Among 20,000 eye cases seen in five years, this is the only such case observed.

The French and the Panama Canal.—The French monthly, *Hygiène Générale et Appliquée*, has been publishing a review of the great sanitary triumph in the Canal Zone, and, while paying due tribute to the achievements of the medical force in charge, it adds that no private company could ever have accomplished the same results. Prophylaxis and executive and administrative power must be closely connected, and the French companies had no authority for sanitary policing of the isthmus, while the United States Government has complete power over the Canal Zone, even to the exclusion of persons whose presence may be considered dangerous for the public health or who would be liable to oppose obstacles to the furtherance of the work. The article continues: "The French companies were unable to use more than moral suasion, and the prejudices—which everywhere are inseparable from ignorance—constituted one of the most serious difficulties with which even the Americans themselves had to contend. Moral suasion is an inadequate weapon when it is a question of applying the most elementary precepts of hygiene and of cleaning up towns which centuries of disregard of hygiene have rendered refractory to all measures of sanitation or even of simple cleanliness. In vain the French companies erected hospitals and spent money on their maintenance; all their efforts remained sterile, as they could not reach the source of the evil. The French companies had to abandon the task of improving the sanitary conditions as much on account of their absolute lack of authority as of the precarious tenure of their possessions and the disturbed condition of the country. The Americans, more fortunate, took up the work just when the progress of science had given them the key to the problem and circumstances rendered it possible for them to apply it; they deserve none the less credit on this account, as even with all this, considerable difficulties yet had to be surmounted. The remarkable results obtained by their methods and perseverance will not only serve the national interests, but will constitute for the entire world an important factor in general progress."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Coliseum Annex, Chicago, Jan. 18-20. Sec., Dr. J. A. Egan, Springfield.
KANSAS: Topeka, Feb. 9. Sec., Dr. R. A. Light, Chanute.
NEBRASKA: State Capitol, Lincoln, Feb. 3-4. Sec., Dr. E. J. C. Sward, Oakland.
NEW YORK: Albany, Feb. 2-5. Chief of Examinations Division, Dr. Charles F. Wheelock.
WYOMING: Cheyenne, Feb. 10-12. Sec., Dr. S. B. Miller, Laramie.

Florida November Report

Dr. J. D. Fernandez, secretary of the Florida Regular Board of Medical Examiners, reports the written examination held at Jacksonville, Nov. 11-12, 1908. The number of subjects

examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 59, of whom 52 passed and 7 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Birmingham Med. Coll.	(1907)	88
University of Alabama	(1908)	81
Atlanta School of Med.	(1907) 88; (1908)	75, 87, 90, 94
Medical Coll. of Georgia	(1902) 75; (1908)	82
Atlanta Coll. of P. and S.	(1907) 87, 93; (1908)	83
Rush Med. Coll.	(1902)	78
College of P. and S., Chicago	(1883)	84
American Med. Miss. Coll.	(1900)	94
Medical Coll. of Evansville, Indiana	(1877)	75
University of Louisville	(1908)	90
Kentucky School of Med.	(1908)	92
Louisville and Hosp Med. Coll.	(1907)	84
Tulane University of Louisiana	(1908)	82, 92
Flint Med. Coll.	(1895)	75
Johns Hopkins Med. School	(1906)	92, 97
Baltimore Med. Coll.	(1892)	80
College of P. and S., Baltimore	(1904)	91
University of Michigan	(1907)	93
Washington University	(1905)	84
Bellevue Hosp. Med. Coll.	(1883) 75; (1906)	95
New York University Med. Coll.	(1879) 84; (1898)	93
University of Buffalo	(1896)	96
Coll. of P. and S., New York	(1884) 96; (1905)	94
University of North Carolina	(1908)	80
Medico-Chirurgical College of Philadelphia	(1907)	96
Jefferson Med. Coll.	(1907)	91
Medical Coll. of South Carolina	(1907) 82; (1908)	84
Chattanooga Med. Coll.	(1906) 75; (1908)	94
Meharry Med. Coll.	(1908)	80
University of Nashville	(1907) 91; (1908)	85, 91
University of Tennessee	(1890)	75
Tennessee Med. Coll.	(1907)	84
University of the South	(1907) 85, 86; (1908)	84
University of Toronto, Ontario	(1882)	94
FAILED.		
Georgia Coll. of Ecl. Med. and Surgery	(1902)	38.7
Hospital Coll. of Med., Louisville	(1908)	52.8
Mississippi Med. Coll.	(1908)	59.4
Meharry Med. Coll.	(1908)	64, 67
Gate City Med. Coll.	(1908)	55.1, 68

West Virginia November Report

Dr. H. A. Barbee, secretary of the State Board of Health of West Virginia, reports the written and oral examination held at Wheeling, Nov. 10-12, 1908. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 31, of whom 28 passed and 3 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Howard University	(1908)	84
Kentucky School of Med.	(1907) 84; (1908)	81, 83
Woman's Med. Coll., Baltimore	(1908)	84
Maryland Med. Coll.	(1908)	82, 90
Louisville Med. Coll.	(1908)	81, 84, 85
College of P. and S., Baltimore	(1907) 86, 88; (1908)	80, 84, 87, 89.
University of Maryland	(1907) 84; (1908)	85
Baltimore Med. Coll.	(1908)	91
Tufts Coll. Med. School	(1897)	90
Miami Med. Coll.	(1908)	87
Medical Coll. of Ohio	(1907)	85
Western Pennsylvania Med. Coll.	(1906) 90; (1907)	87
Leonard School of Med.	(1908)	86, 89
University of Vermont	(1903)	86
University College of Med., Richmond	(1901)	88
FAILED.		
University of Louisville	(1907) 77; (1908)	70
Chattanooga Med. Coll.	(1904)	77

The following questions were asked:

PHYSIOLOGY AND HISTOLOGY

1. Give the normal constituents of the urine, and describe the action of the kidneys; 2. Describe the normal heart sounds, give probable reasons for same and tell where best heard; 3. How is blood renewed in the human body after hemorrhage, give normal proportion; 4. Name the organs of the special sense and their function; 5. Describe the physiology of rectal feeding; 6. What is the function of the Eustachian tube, how and why is hearing affected by the membrani tympani being ruptured? 7. State the functions of the (anterior and posterior) spinal nerve roots, prove same; 8. What is the physiologic function of the liver, lungs and kidneys; 9. Give the histology of a nerve trunk; 10. Give function of veins, arteries and capillaries. How do they differ as to structure?

SURGERY

1. State fully how you would treat a blank cartridge wound of the palm of the hand, and give reason for your plan of treatment; 2. Give cause and treatment of hydrocele; 3. In case of threatened death during general anesthesia, what measures should be adopted? 4. What are the varieties of dislocation of the shoulder joint? How would you treat one variety? 5. What are the first and pathognomonic symptoms of secondary syphilis? What is the etiology and treatment of venereal warts? 6. Give symptoms, diagnosis and treatment of intestinal obstruction; 7. How would you diagnose retention of urine? What would you do for it? 8. What symptoms would lead you to think that a patient was suffering from a concealed hemorrhage, after a laparotomy; 9. Give diagnosis of presence of gallstones. Give in detail surgical treatment of same; 10. Give the cause, diagnosis and treatment of rupture of the intestine.

CHEMISTRY AND MEDICAL JURISPRUDENCE

1. Define temperature, (b) fusing heat, (c) latent heat, (d) solution; 2. Explain osmosis, what chemical value has it? For what is silver nitrate used? 3. Tell how you would distinguish between ferrous and ferric salts, what two bodies containing iron are used in medicine? 4. How would you detect the presence of arsenic? State in detail the duties of the physician in case of arsenical poisoning; 5. Give a short and simple classification of insanity; 6. Define a base; 7. Tell in detail how to detect bile in urine; 8. Describe the chemical changes in starch during digestion in detail, giving formulas; 9. Give the chemical reaction of saliva, gastric juice, urine, mother's milk and synovial fluid; 10. Give test for formaldehyd in milk.

PRACTICE AND PEDIATRICS

1. Give pathology and treatment of cholera infantum; 2. Give treatment of intestinal indigestion; 3. How would you treat a case of typhoid perforation? 4. Etiology, symptoms and treatment of scorbutus; 5. What is septicemia? What is pyemia? 6. Define hypertrophy and dilatation of the heart; 7. Give symptoms and treatment of Bright's disease; 8. Give symptoms and treatment of thrush; 9. Define, give symptoms and treatment of rachitis; 10. Acute enterocolitis symptoms and treatment.

MATERIA MEDICA AND THERAPEUTICS.

1. Give information, principal uses and dosage of salol; 2. Describe hyoscyamin, uses and dose; 3. Name three diuretics with indications and dose of each; 4. What are the indications for internal use of calcium chloride; dose? 5. Write a prescription for a case of nervous dyspepsia with flatulence; 6. Give type of so-called tonics, when and how used, dose; 7. What is the most useful preparation of arsenic, dose? 8. Name three useful therapeutic remedies—not drugs; 9. What is hydrastis canadensis, where found, physiologic action, preparation, dose; 10. Give history, uses, dose of terpin hydrate.

BACTERIOLOGY AND HYGIENE

1. Name three divisions of bacteria and one representative of each division; 2. What is toxin? An antitoxin? 3. Name three diseases caused by microorganisms and describe the organism in each; 4. Name some of the pus forming bacteria; 5. Give some of the most approved methods of staining the common bacteria; 6. What is the relative value of moist and dry heat as a germicide? 7. Name five of the most important disinfectants with directions for using each; 8. Name some of the most important adulterations found in foods. How may they be detected? 9. What advice would you give a patient suffering from tuberculosis to protect other members of the family? 10. What hygienic precautions are essential to prevent the ravages of summer diseases in children?

SPECIAL PRACTICE

1. Differentiate between chronic pneumonia and tuberculosis; 2. Give diagnosis of cancer of the stomach; 3. Give best method of removing tonsils; 4. Give diagnosis of tuberculous laryngitis; 5. Describe adenoids and give treatment; 6. Give treatment for acute coryza; 7. Treatment of ophthalmia neonatorum; 8. Diagnosis of iritis, what are the causes; 9. Describe and treat tabes dorsalis; 10. What is Romberg's symptom?

OBSTETRICS AND GYNECOLOGY

1. Give axis and diameter of pelvis and name muscles engaged in act of expulsion of child; 2. Give the undesirable presentations and positions and the customary methods to bring about delivery; 3. Describe in detail application of obstetric forceps, when resort to their use? 4. Give your method of conducting third state of labor and the treatment of post-partum hemorrhage; 5. Carefully detail the proper care of labor from birth to third day; 6. Surgical and non-surgical attention to mastitis; 7. Probable cause and treatment of puerperal eclampsia; 8. Give cause, symptoms and treatment of puerperal septicemia; 9. Give various treatments of uterine displacements; 10. Give differential diagnosis and treatment of fibroid and cystic tumors of pelvic cavity.

ANATOMY AND EMBRYOLOGY

1. Name the bones of the upper extremity, including the hand; 2. Brain: Describe its gross anatomy and give coverings; 3. How many teeth in temporary set, permanent set. Describe a tooth; 4. Describe the aorta, give its branches; 5. Describe the contents of the axillary space; 6. Sciatic nerve, give origin and distribution; 7. Name and locate the ductless glands; 8. Name varieties of articulations, give example of each; 9. Describe prostate gland; 10. Describe chorion.

Medicolegal

Antitrust Law Not Violated by Agreements of Physicians Fixing Fees.

The Supreme Court of Iowa says, in the habeas corpus case of W. A. Rohlf vs. Henry Kasemeier and the State of Iowa, that the plaintiff and a number of other physicians and surgeons were indicted by the grand jury of Bremer county for the crime of entering into an agreement, combination or understanding to fix and maintain fees and charges to be exacted for medical and surgical services in said county. The plaintiff was arrested under the indictment and thereafter

brought the habeas corpus proceedings to secure his release from custody. He claimed that he was unduly and illegally restrained of his liberty for the reason that the indictment charged no offense known to the Iowa laws, and that if there were a law forbiding such acts as were charged against him it was unconstitutional and void in that it deprived him of his liberty, prevented him from acquiring or possessing property and deprived him of his safety and the pursuit of happiness; deprived him of the right of contract and of the equal protection of the laws.

The indictment charged that said physicians, on July 30, 1907, in said county, being physicians and surgeons located and practicing their professions in said county, "did then and there wilfully, unlawfully, and maliciously conspire, combine, confederate and agree with each other to create, organize and enter into, and did then and there wilfully, unlawfully and maliciously enter into and become a member of and a party to a trust, pool agreement, contract, combination, confederation and understanding to fix, establish and regulate and maintain the price of a commodity in the County of Bremer, State of Iowa, and did then and there wilfully and unlawfully fix, regulate and establish the price of medical service and medical skill, and the profit, benefit, fee and compensation to be received therefor, contrary to the form of the statute in such case made and provided, and against the peace and dignity of the State of Iowa."

The case must turn on the construction of the Iowa statute. Section 5060 of the Iowa Code, under which the indictment was found, reads: "Pools and trusts—Any corporation organized under the laws of this or any other state or country for transacting or conducting any kind of business in this state, or any partnership, association or individual, creating, entering into or becoming a member of, or party to, any pool, trust, agreement, contract, combination, confederation, or understanding with any other corporation, partnership, association or individual, to regulate or fix the price of any article of merchandise or commodity, or to fix or limit the amount or quantity of any article, commodity, or merchandise to be manufactured, mined, produced, or sold in this state, shall be guilty of a conspiracy."

The first point to be decided was, Did the acts charged constitute a crime under this section of the Code? It will be noticed that it forbids a combination, agreement or understanding to regulate or fix the price of any article of merchandise, or commodity, or of merchandise to be manufactured, mined, produced or sold in this state. The primary inquiry was, Are the charges of a physician or surgeon for his medical skill or ability an article of merchandise or commodity to be produced or sold in this state?

It was contended that the word commodity is broad enough to cover the charge made for professional services or skill, and that the trial court was in error in holding to the contrary. Now the word commodity is derived from the Latin commodetas, and means primarily a convenience, profit, benefit or advantage, but in referring to commerce it comprehends everything movable, that is bought or sold, except animals.

It must be remembered, however, that the word is found in a criminal statute and that in the interpretation of such statutes different rules apply from those which obtain in civil matters or where contracts are involved. Nothing is to be added to such statutes by intendment, and as a rule they are to have a strict construction. Moreover, it is well settled that in construing any statute all the language shall be considered and such interpretation placed on any word appearing therein as was within the manifest intent of the body which enacted the law. Much of necessity depends on the context and on the usual and ordinary significance of the language used.

Here the indicted defendants were, for a price, giving their own services, or perhaps selling them, and the question was, were these personal services a commodity? As already indicated, the word must be taken in connection with the other words used in the statute, and it is manifest that the commodity referred to must have been such as could be manufactured, mined, produced or sold in the state, and the price was to be of an article of merchandise or commodity. If the contention of the state was correct, the statute covered all kinds of personal labor, both skilled and unskilled, under the term commodity. Indeed, this was the broad claim of counsel. But used in connection with the term merchandise and qualified as it is in the latter part of the section by the words manufactured, mined, produced or sold, it is manifest that the statute was not intended to and did not include labor either skilled or unskilled.

The statute in question was aimed at unlawful conspiracies or combinations in restraint of trade and was manifestly not intended to cover labor unions. It is the right of miners, artisans, laborers or professional men to unite for their own improvement or advancement or for any other lawful purpose, and it has never been held, so far as this court is able to discover, that a union for the purpose of advancing wages is unlawful under any statute which has been called to the court's attention.

No case was cited which supports the state's contention, and this court has not been able to find any. On the other hand the following lend support to the court's conclusions: Cleland vs. Anderson, 92 N. W. R., 307; Downing vs. Lewis, 76 N. W. R., 900; State vs. Associated Press, 51 L. R. A., 151.

It would be stretching the statute entirely too far to hold that it covers combinations to fix the price of labor. That the practice of medicine and surgery is labor, no one, the court thinks, will question.

The trial court was right in discharging the plaintiff and its judgment must be and it is affirmed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

January 2

1 *Responsibility of the Family Physician Toward Tuberculosis. S. A. Knopf, New York.
2 *Benjamin Franklin from the Medical Viewpoint. C. G. Cumston, Boston.
3 *Asiatic Cholera. W. H. Thomson, New York.
4 Toxic Effects from Bismuth Subnitrate. E. G. Beck, Chicago.
5 Treatment of Fracture of Neck of the Femur. R. E. Soule, New York.
6 New Instrument for Estimation of Urinary Acidity. H. R. Harrower, Chicago.
7 Bluish Discoloration of Conjunctiva from an Indelible Pencil. A. Bray, Philadelphia.
8 Treatment of Enlarged Thyroid. A. Judd, New York.

1. **The Family Physician in Tuberculosis.**—Knopf lays down, as the duties of the family physician, immediate notification of the patient, if an adult, and of his friends on the finding of tuberculosis. Notification of health authorities where compulsory or permitted. Change of climate should depend on wishes of patient, subject to a consideration of his capacity for maintaining himself, or being properly maintained from home. Knopf discusses the care of tuberculous parents who have children but must be treated at home; also the marriage of the tuberculous. Tuberculous patients should be dissuaded from marrying, but he does not consider that legislative enactments against tuberculosis can have any other than an educational value. Pregnancy always aggravates the condition; often it may be necessary to empty the uterus, but prevention of procreation is better than cure. Treatment should never be conducted by the specialist alone, but always in association with the general practitioner. Knopf has inspected the working of the Emmanuel Tuberculosis Clinic and praises it highly, but points out that the success depends essentially on a combination of material aid with the confidence imparted by an assuring personality, which lead to absence of anxiety and hope of cure. Equal results can be attained by those who can command these factors with or without a religious basis.

2. **Benjamin Franklin.**—Cumston gives an interesting historical account of Franklin, the value of which is enhanced by reproduction of many of Franklin's writings, particularly his dialogue on gout, and his instructions on inoculation.

Medical Record, New York

January 2

10 *Injuries of the Neck of Femur in Early Life. R. Whitman, New York.
11 *Two Important Angioneuroses. A. J. Whiting, London.
12 Headaches of Ocular and Nasal Origin. C. Graef, New York.
13 A Table of Standard Weights for Women. F. S. Weisse, New York.
14 Is Food Containing Benzoates Injurious to Health? E. E. Smith, New York.

10. **Injuries of Neck of Femur.**—Whitman reports 15 cases, selected to illustrate four types of fracture of the neck of femur in early life, as they are likely to be presented for treatment. These four classes are:

1. The unusual cases, in which a correct diagnosis permits immediate correction of deformity by manipulation.

2. Cases in which the fracture has consolidated, the deformity being of the coxa vara type, which may be corrected by cuneiform osteotomy of the shaft without disturbing the joint.

3. Ununited fractures which require direct operation for the purpose of fixing the fragments.

4. Epiphyseal fractures in which as a rule the capsule must be opened.

He details the operative and other treatment, the aim of which, in all cases, has been functional cure, to which the removal of deformity by means adapted to its character and duration must be the essential preliminary. The results attained, as contrasted with disability, distortion and non-union even, in cases of the same favored class, in which the treatment or non-treatment had followed accepted methods, encourages the belief that the application of the same principles to all cases in which the condition of the patient permits local treatment, would lead to a corresponding improvement in the final results.

11. **Angioneuroses.**—Whiting discusses acroparesthesia and angioneurotic edema. The first is important because it is frequent and incapacitating. The second because it may be the cause of sudden death and may possibly be transmitted to the children's children. He cites four cases of the first form and three of the second.

Boston Medical and Surgical Journal

December 31

15 Tuberculosis of the Peritoneum. F. B. Lund, Boston.
16 Dementia Præcox, Paranoid, Associated with Bronchiectatic Lung Disease and Terminated by Brain Abscesses. (*Micrococcus catarrhalis.*) E. E. Southard and J. B. Ayer, Boston.
17 *Morris' Point of Tenderness as an Aid in Diagnosis. J. C. Hubbard, Boston.
18 Case in which Early Cervical Lymph Node Enlargement was the Sole Sign of Carcinoma of the Esophagus. O. W. H. Mitchell, Columbia, Mo.

17. **Morris' Point.**—Hubbard discusses the additional point in the diagnosis of appendicitis suggested by Morris (The Journal, Jan. 25, 1908, p. 278), and draws the following conclusions:

The abdominal lymphatic glands, becoming secondarily inflamed, cause tender areas. The area found tender on examination is somewhat of a guide to the organ primarily infected, and, therefore, in certain cases may be an aid in differential diagnosis.

In acute appendicitis, tenderness at Morris' point is of less importance than the symptoms caused by the appendix itself.

In chronic appendicitis, tenderness at Morris' point may be of distinct diagnostic value. Tenderness at this point, even though the only physical sign, makes the diagnosis of appendicitis by the rule of chance probable; when combined with tenderness at McBurney's point, the diagnosis becomes more certain. Its absence does not rule out appendicitis, and it may occur in other conditions.

The point has by no means the importance given to it by Dr. Morris.

Lancet-Clinic, Cincinnati

December 26

19 *Bismuth Paste in Treatment of Rectal Fistula. J. R. Pennington, Chicago.
20 Functional Tests of the Ear. D. A. Vanderhoof, Rockford, Ill.
21 *Why Operations for Bunion Fail, with Description of One That Does Not. J. L. Porter, Chicago.

19. This article was abstracted in The Journal, Nov. 7, 1908, p. 1908.

21. **Bunion.**—Porter enumerates five reasons for the failure of many operations for bunion, and describes his own technic, which for five years has given perfect satisfaction. A curved incision two inches long, just below the edge of the callus covering the head of the metatarsus, is made with the foot elevated and the ankle constricted so as to produce a bloodless field. The capsule is excised in the same direction and extent, and the capsule and periosteum are stripped a little from the bone at their junction. About three-quarters of the articular surface is removed, including all the enlarged inner tuberosity. The head of the bone is not removed, because the deformity can be corrected without, shortening of the inner border is avoided, and motion is more free. The toe is pulled strongly inward and the tendon of the extensor proprius hallucis is divided subcutaneously at the joint. Very little pressure will then straighten the toe. The cavity is filled with gauze, with hot antiseptic solution. While the toe is held in its corrected position a mattress suture of strong iodin catgut is carried from the lower angle to the upper angle, returned through the upper angle, and brought out at the lower angle. The gauze packing is removed and the suture tied, approximating the upper and lower angles of the capsule incision, when, if the bone has been properly removed and the tendon divided, the toe will remain straight. The skin wound is closed with horsehair or catgut, and a thin gauze dressing put on. Over it is a piece of piano felt with a hole in it, like a bunion plaster, and a cigar box splint a trifle longer than the foot and wider than the toe is fastened to the inner border of the foot with adhesive plaster. It is then covered with a bandage, starting from the angle, and is fastened firmly to the foot and the toe firmly fastened to the splint. Unless there is some indication for doing so the dressing is not disturbed for two or three weeks. It is not safe to remove all restraint from the toe for at least six weeks. A straightlasted shoe, with a broad ball, must be insisted on even with women in the height of fashion. Porter well says: "If you can not dictate the shoes, don't do the operation."

Virginia Medical Semi-Monthly, Richmond

December 25

22 The Medical Profession as Represented in the United States Navy. P. M. Rixey, Washington, D. C.
23 *The Human Element in Medicine. P. Zenner, Cincinnati.
24 Relation of the General Practitioner to Public Health Work. E. G. Williams, Richmond.
25 Sprains and Sprain Fracture. M. St. John, Bristol, Tenn.
26 *Necessity for Diagnosis as Preliminary Step to Gynecologic Operations. C. R. Robins, Richmond.
27 Formation of Maternal Part of the Placenta. L. Loeb, Philadelphia.
28 External Uses of Magnesium Sulphate. J. S. Harrison, Elm City, N. C.
29 Case of Tetanus. H. C. Grant, Waynesboro, Va.
30 Plea for the Virginia Consumptive. R. H. Garthright, Vinton, Va.

23. Abstracted in Society Proceedings, The Journal, Nov. 21, 1908, p. 1807, and also published in the *Lancet-Clinic*, Nov. 7, 1908.

26. Abstracted in The Journal, Nov. 14, 1908, p. 1723.

Northwestern Lancet, Minneapolis

December 15

31 Report of 108 Consecutive Abdominal Operations without a Death. G. C. Barton, Minneapolis.
32 Diagnosis and Treatment of Incipient Tuberculosis. L. A. Nippert, Minneapolis.
33 Opsonins and Their Practical Value. H. L. Ulrich, Minneapolis.
34 Medical Inspection of Public Schools. M. J. Abbey, Mayville, N. D.
35 Operation for Hernia, Followed by the Ambulatory Treatment. A. E. Benjamin, Minneapolis.

Archives of Internal Medicine, Chicago

November

36 *Treatment of Thyroidism by a Specific Cytotoxic Serum. J. Rogers and S. P. Beebe, New York.
37 *Acidosis and Associated Conditions. J. Ewing, New York.
38 Hypernephroma. F. J. Hall, Kansas City.
39 *Paroxysmal Hemoglobinuria. C. F. Hoover and C. W. Stone, Cleveland.

36. **Serum Treatment of Tyroidism.**—Rogers and Beebe describe their work as the first attempt to treat disease in the human subject by means of a specific cytotoxic serum, and their conclusions, subject to revision as experience increases, are as follows: The serum has a specific effect in neutralizing the toxic action of the thyroid secretion; as a therapeutic

agent it gives results which can not, in many cases, be attained by any other medical means; not all cases presenting symptoms of thyroidism can be treated successfully with serum, because not all cases are purely hypertrophic in origin. The following types are favorable for serum treatment: Typical exophthalmic goiter in the early stages, including the incipient, the mild, the severe, and those extremely severe forms which develop very rapidly and have been described as the acute toxemic type, resembling malignant endocarditis. Typical exophthalmic goiter in cases which may have existed for some time in subacute form with occasional exacerbations, but without marked secondary changes. The rapid amelioration of symptoms in the acute toxic cases, similar in most respects to the well-accepted instances of neutralization of toxin by antitoxin, is a weighty argument in favor of believing the symptoms to be due to the toxic effects of hyperthyroidism. The beneficial results of combined treatment, especially in the older cases, indicates a dysthyroidism as well as hyperthyroidism as a factor in the production of symptoms. The following types may require combined treatment: 1. The patients who develop thyroidism after reaching the age of 40 or 50 years: (a) those who, after middle life, show thyroidism for a varying period before the appearance of a goiter; (b) those who have borne an innocuous goiter for years and late in life develop signs of thyroidism. 2. Atypical forms of thyroidism: (a) men, and more often women, of any age who present many signs of thyroidism, but who often have a dry skin and bradycardia and are usually considered neurotic or neurasthenic; (b) patients with nervous and vasomotor signs of thyroidism, but who complain of a more or less constant headache accompanied in most cases by nausea and abdominal discomfort; (c) the psychopathic cases, the mental disturbances having no definite relation to the severity or type of thyroidism.

37. **Acidosis.**—The object of Ewing's paper is to present, first, the experimental basis of the doctrine of acid intoxication, and to consider the general problems as presented in the most pronounced form of acidosis, that of diabetes; second, to discuss the physiology and physiologic chemistry of the substances; and third, to deal with the various diseases in which acidosis occurs, and determine, so far as may be, the significance of acidosis, in such conditions as starvation, acute yellow atrophy, eclampsia, delayed chloroform poisoning, cyclic vomiting of children, gastrointestinal diseases, and phosphorus poisoning. It is Ewing's personal opinion that the experimental basis of the theory of acid intoxication is sufficiently well founded, and that the chemical studies of diabetes furnish adequate grounds for concluding that acid intoxication produces coma in diabetes, but the clinical evidence is unsatisfactory. The status of the whole subject of acid intoxication appears to depend on its position in diabetes.

39. **Paroxysmal Hemoglobinuria.**—Hoover and Stone make a report on two cases and draw the conclusion that, as the matter at present stands, we are justified only in saying that the hemoglobinemia which follows exposure to cold is due to some biologic product in the plasma, which in its behavior admits of the demonstration of every step in hemolysis as expounded by the side-chain theory of Ehrlich.

Surgery, Gynecology and Obstetrics, Chicago

November

40 *Experimental Study of Intraperitoneal Diffusion. J. L. Yates, Milwaukee.
41 Cystitis Glandularis et Follicularis. H. L. Kretschmer, Chicago.
42 Enormous Ovarian Cysts. O. J. Fay, Des Moines, Ia.
43 *Etiology of Ectopic Gestation. C. D. Williams, Cleveland, Ohio.
44 Gangrene of the Vermiform Appendix. J. D. Malcolm, Edinburgh, Scotland.
45 *Nature of the Cancerous Process. R. Park, Buffalo.
46 Hemorrhages from the Stomach and Bowels Following Operations on the Gall Bladder and Appendix. A. D. Kohn, Chicago.
47 Acute Osteomyelitis. F. G. Dyas, Chicago.
48 *Case of Gastric Tetany, Operation and Recovery. J. Y. Brown and W. Engelbach, St. Louis.

40. **Intraperitoneal Diffusion.**—Yates describes experiments undertaken to ascertain the effect of variations in bodily positions and in gastrointestinal activity on the degree and extent of diffusion of benign and toxic substances when introduced intraperitoneally as a suspension or solution; also to determine the influence of the degree of diffusion on the absorption of toxins. The substances dealt with were lamp black, moccasin venom and cobra venom. The following conclusions are drawn:

1. Intraperitoneal diffusion results from the operation of purely physical forces abetted by physiologic activities.
2. The greatest attainable restriction of this diffusion must result from the opposition of controllable physical force to the paths of greatest extension and the inhibition of physiologic activities.
3. Under similar conditions the rate of absorption varies directly with the extent of diffusion.
4. The restriction of diffusion and consequent absorption is best obtained by the action of generous doses of opium to reinforce the diminished activity in an empty alimentary canal, general bodily quiet with its resultant lessened respiration, and by the maintenance of that position of the body which will oppose the action of gravity to the direction of the most disadvantageous extension.
5. The absorption of toxins is dangerous in proportion to the rate and extent of that absorption, and, although this is complicated by pathologic processes, it is limited by the application of the principles stated above.

The clinical significance of these conclusions emphasizes the beneficial effect of absolute rest, the avoidance of everything that can stimulate peristalsis—nothing by mouth, and, by rectum, only small amounts introduced slowly; bodily quiet and avoidance of forceful or repeated pelvic and abdominal palpation. The importance of the administration of sufficient opium to guarantee freedom of movement is once more upheld, as a valuable means of controlling the diffusion which causes the early and most dangerous absorption. Postural methods are of value, but are of secondary importance compared to the maintenance of adequate blood pressure. External applications are of minor importance.

43. **Ectopic Gestation.**—Williams, from an exhaustive study, concludes that the presence of a precedent inflammatory reaction (found microscopically in all his specimens) is responsible for the onset of ectopic pregnancy. The presence of false diverticula of mucous-lined channels is the chief predisposing cause of tubal pregnancy in from 95 to 98 per cent. of cases—a gonococcus infection is a greater predisponent than any other. Observation shows the inflammatory change, etc., to be commonly bilateral; the frequent recurrence on the other side after removal on one tube is also noted. Therefore, if one tube—not being hopelessly occluded or too densely adherent—is to be saved for conception, it should be pointed out that there is a risk of ectopic gestation. The responsibility should be assumed by the patient or her friends.

45. **Cancer.**—Park insists that cancer is a specific disease, intensely infectious and transmissible, being caused by an extrinsic agent. He therefore urges that cancer must be treated much as we would treat a filth disease, especially when it has advanced to the ulcerative stage—namely, by the most efficient cleanliness. Cremation should supersede earth burial, and all soiled dressings and discharges should be destroyed by fire, while rooms, and even houses, inhabited by cancer patients should be most thoroughly disinfected, both during illness and after death. It would be well, also, to adopt Brand's suggestion that no food should be prepared or consumed with unwashed hands. In addition to this, it would appear that in some respects, at least, we ought to be at an advantage in treating this disease, since its earliest manifestations are local.

48. **Gastric Tetany.**—Brown and Engelbach emphasize the view that obstruction of the pylorus is the anatomic cause of this particular variety of tetany. This anatomic condition can be relieved by surgical means, thereby removing a hitherto fatal disease to the class of curable disease. The dilatation of the stomach that is present in this condition is as much a sequel of this obstruction as the tetany itself is. The authors describe in detail a case in which a practically immediate cure was pronounced by the short loop posterior gastroenterostomy suture method. They discuss the pathology, clinical course, diagnosis, prognosis and treatment. Under this last they emphasize prophylactic treatment by carefully caring for lesions of the pylorus before they cause any serious obstruction—an additional argument for a radical surgical treatment of chronic ulcers, cholelithiasis, etc. Dur-

ing the attacks, expeditious symptomatic treatment should consist of stomach lavage, hypodermoclysis, proctoclysis and morphin hypodermically. The operation will depend on individual conditions, pyloroplasty or gastroenterostomy being the most generally applicable.

Annals of Surgery, Philadelphia

December

49 Invagination of Meckel's Diverticulum. H. T. Gray, London.
50 *Peritonitis in Children from Unknown Sites of Infection. C. M. Dowd, New York.
51 *Diffuse Septic Peritonitis, Due to Appendicitis. R. H. Fowler, New York.
52 The Interlocking Suture. R. C. Turck, Jacksonville, Fla.
53 Primary Sarcoma of the Peritoneum. J. M. Elder, Montreal.
54 Gunshot Wound of Abdomen Involving the Stomach and Jejunum, Complicated with Pregnancy. H. M. Lee, New London, Conn.
55 Appendicitis and Tetany. C. M. Goodrich, Brooklyn, N. Y.
56 Harrington's Operation of Intraperitoneal Cystotomy. C. L. Scudder and L. Davis, Boston.
57 Simultaneous Ligation of Both External Iliac Arteries for Secondary Hemorrhage Following Bilateral Ureterolithotomy. A. V. Moschcowitz, New York.
58 *Operative Treatment of Acute Gonorrheal Epididymitis. F. R. Hagner, Washington, D. C.
59 *Finger Enucleation of the Tonsil. F. S. Mathews, New York.
60 Blastomycosis of the Spine. G. E. Brewer and F. C. Wood, New York.
61 Arteriovenous Anastomosis for Gangrene. J. C. Hubbard, Boston.
62 Modification of the Gritti Amputation with Special Reference to Nerve Blocking and Regional Anesthesia. J. M. Wainwright, Buffalo.
63 Skin Grafting of the Heel: By Means of a Flap from Opposite Thigh. C. J. Habbegger, Watertown, Wis.
64 Some Deformities of the Hand. E. Alden, Los Angeles.
65 Fracture of the Os Magnum. A. H. Harrigan, New York.

50. **Peritonitis in Children.**—Dowd says that there are certain phases of peritoneal inflammation in children which differ enough from those ordinarily found in adults to justify their special consideration. Children are more likely to have rapidly spreading, insidious forms of peritonitis than adults are, since they are less likely to encapsulate the inflammation. They are much less likely to be constipated during its course, and hence have less of that tympanites which is so hard for the patient but which is a telltale to the doctor. They are much more likely to have associated cerebral symptoms, so that very competent observers are sometimes at a loss to know whether a given case is to be considered as primarily cerebral or abdominal. Again, pulmonary inflammation is often accompanied by localized abdominal pain and rigidity, so that children with beginning pneumonia are believed to have appendicitis. Pneumococcus peritonitis, either isolated or associated with other pneumococcus inflammations, is much more common in children than in adults. General gonococcus peritonitis is occasionally found. Tuberculous peritonitis is common, and sometimes presents symptoms which are most difficult to interpret.

51. **Diffuse Septic Peritonitis.**—Fowler discusses diffuse septic peritonitis due to appendicitis on a basis of sixty-nine well-marked cases. He draws the following conclusions:

1. We must look, for a lowering of the high mortality rate, to early operation rather than to any further development in mechanical intervention.
2. Early institution of postural drainage is of greater aid in preventing septic material from reaching the diaphragmatic peritoneum than in preventing further absorption after this area is once involved. Ambulance patients with peritonitis of this nature are frequently brought to the hospital in the sitting posture. The trunk should be elevated during lavage of the peritoneum. The manner of instituting postural drainage matters but little, provided that the pelvis is sufficiently low for gravitation to take place and the patient is comfortable.
3. Peritoneal lavage dilutes material, and when practiced should be continued until the cavity is partially closed. Plastic lymph not removed by irrigation or by simple lifting should not be disturbed.
4. Wound drainage: All cases of this nature should be drained. The ideal method in women is by a posterior colpotomy incision, by means of a large rubber tube.
5. Oehsner's treatment should be instituted after operation and Murphy's proctoclysis should be practiced.
6. The abdomen should be opened by a small incision over McBurney's point, and the primary focus quickly dealt with. To prevent evisceration the greatest gentleness in handling parts must be observed.

58. Abstracted in THE JOURNAL, July 11, 1908, p. 161.

59. **Finger Enucleation of Tonsil.**—Mathews describes a method of enucleating the tonsil by means of the finger, under etherization with a paper cone, for from two to four minutes, until the stage of primary anesthesia is reached without obliteration of pharyngeal or corneal reflexes. The advantages claimed for the finger enucleation of tonsils as described are:

1. Whole tonsils are removed—a tonsillectomy.
2. The anesthesia is primary and of short duration.
3. The operation requires but a couple of minutes even when adenectomy is added.
4. The armamentarium is simple and cheap; only three instruments are used, a mouth gag, a Mackenzie tonsillotome, and an adenoid curette.
5. Only one assistant is needed, either physician or nurse; in the latter case one can give the anesthetic oneself.
6. Skill in enucleating tonsils with the fingers is easily acquired by any one familar with the anatomy of the parts.
7. As it is done entirely by feeling one is not interfered with by the presence of blood and mucus in the throat.
8. Convalescence is no longer or more painful than after tonsillotomy.

University of Pennsylvania Medical Bulletin, Philadelphia

November

66 Peculiar Blastomycetoid Organisms Met in Two Cases of Parasitic Conjunctivitis. W. C. Posey, J. T. Carpenter, C. M. Hosmer and A. J. Smith, Philadelphia.
67 *Bactericidal Property of Milk. J. S. Evans and T. A. Cope, Philadelphia.
68 Transient Parasitism in Man by a Species of Rhizoglyphus. W. Pepper, A. J. Smith, Philadelphia, and F. W. Schnauss, Cecil, Ga.
69 Growth of Our Knowledge of Adams-Stokes Disease. E. D. Krumbhaar, Philadelphia.

67. **Bactericidal Property of Milk.**—Evans and Cope report an experimental study from which they draw the following conclusions:

1. Freshly drawn milk possesses a bactericidal activity toward certain micro-organisms, and an inhibitory activity toward others.
2. This activity is destroyed at 68° C. and materially injured at 55° C. It varies in different cows and lasts from 6 to 12 hours.
3. Coagulation and acidity of milk do not depend solely on the bacterial content. They are influenced by natural properties of milk which are soon overshadowed by the metabolic products of bacteria.
4. Sterile cow's milk freshly drawn is acid to phenolphthalein and increases very slowly in acidity, independently of bacterial metabolism, due, probably to the destruction of colostrum cells.
5. Results obtained in testing milk with mixed bacterial flora are influenced by bacterial antagonism.

New York State Journal of Medicine, New York

November

70 *Senile Heart and Blood Vessels. J. L. Heffron, Syracuse.
71 Perithelioma of the Chorioid and Ciliary Body. J. B. Thomas, Brooklyn.
72 Mixed Infection in Pulmonary Tuberculosis. A. T. Laird, Albany.
73 Insects and Disease. J. B. Huber, New York.

70. **Senile Heart and Blood Vessels.**—Heffron points out that degenerative changes in the arteries are commonly observed in men past 50 years of age. Investigations into heredity as bearing on the physical makeup of man have demonstrated that the degree of resistance of the body tissues is determined at birth, and is man's endowment from a long line of ancestors. Moreover, the coats of the arteries have practically no rest from their labors, and the fact that their work is increased by physical exercise necessarily involves their eventual degeneration. Acute infectious diseases, tuberculosis, laborious occupations, nervous strain, autointoxication associated with the universal habit of overeating, degeneration of the ductless glands, syphilis and poisons (such as alcohol and lead), nephritis, diabetes and gout, are all discussed as etiologic factors. The process of degeneration is described, and its relation to thrombosis and embolism considered. In the examination of the blood vessels, the author recommends practicing palpation and comparing the results with those registered by the Riva-Rocci instrument. The heart of the aged is valid so long as it can do a good day's work without embarrassment to itself or the other organs; but the consideration of this subject taxes the good judgment of the physician greatly. The thing that has made precocious old age in this country is the intensity of the tasks that have been set for us. The first therapeutic resource is rest of body and mind. The body in bed, but the mind rebelling and keeping up high tension by its excitability is a bad combination. When cases are not extreme, and when the heart is doing good work against a beginning arteriosclerosis, it is not desirable to advise complete rest. Such exercise should be encouraged as will dilate the peripheral vessels and thus diminish arterial pressure—golf, gardening, walking, croquet, bicycle riding on the level, etc. When voluntary exercise is impossible, massage and Swedish movements are invaluable. The second therapeutic resource is the reform of the table:

meat, soups and extracts, teas and broths, must be forbidden. A little meat once a day will not do harm, but a bowl of the waste products of some other animal, introduces just what there is difficulty in eliminating. Fruits, especially apples, pears and grapes, are valuable. Alcoholic beverages should be cut off, but gradually in the case of those long accustomed to them. Coffee, tea and tobacco, if at all, should be used only in the strictest moderation. The patient must not take too much fluid. The water-drinking idea is much overdone. The aged afflicted with arteriosclerosis should avoid chilling. Heffron discusses the drug treatment and says that the one drug that has stood the test of time is potassium iodid, which may be given in doses of from 30 to 45 grains a day, preferably in milk, between meals and at bedtime. This remedy should not be begun until a certain degree of equilibrium has been established. A brisk saline cathartic is necessary. If given in concentrated solutions until watery stools are obtained it will eliminate so much fluid that the volume of the blood will be lessened, and thereby the amount of work for the heart will be diminished. For the pains, dry heat and in the case of the aged, morphin or codein preferably, will serve.

Texas State Journal of Medicine, Fort Worth

December

74 *Abdominal Reflexes from a Surgical Standpoint. W. A. Duringer, Fort Worth.
75 Aqueous Vitreous—Three Members of One Family Similarly Affected. W. A. Harper, Austin.
76 *Elements of Decay in American Civilization. F. E. Daniel, Austin.
77 *Some Neglected Phases of Malarial Pathology. W. Shropshire, Yoakum.

74. **Abdominal Reflexes.**—Duringer discusses the physiologic significance of the vicious circle of abdominal sympathetic plexuses, namely, celiac, renal suprarenal, phrenic, superior mesenteric, aortic and spermatic. He suggests the importance, in abdominal operations, of exploring the condition of accessible organs, in order that in this manner light may be thrown on clinical reflexes. He reports cases in which information quite different from what was expected was obtained in this manner at operation.

76. **Decay in American Civilization.**—Daniel discusses miscegenation, undesirable immigration, and alcoholism and insanity, and calls for a department of public health beyond the reach of politics and with an adequate appropriation.

77. **Neglected Phases of Malarial Pathology.**—Shropshire suggests that the toxin excreted by the malarial parasites must be a colorless chemical, acting like an escharotic on the first tissues which it comes into contact, usually the endothelial cells of the capillaries where sporulation takes place. This is his first neglected point. The second is that for some at present unexplainable reason the parasites have the power of congregating in certain localities, and there pursuing their usual life cycle. The effect of this is twofold. First, the congregation of parasites is probably the determining factor in the severity and danger of the paroxysms; and second, the location of this grouping for sporulation determines the malarial manifestations—cerebritis, nephritis, gastritis, neuritis, etc.

Journal Tennessee State Medical Association, Nashville

December

78 Adenoids. C. H. Davis, Knoxville.
79 *Retention of Urine in a Female Child. T. J. Happel, Trenton.
80 Unusual Symptoms in Disease of the Appendix. W. A. Bryan, Nashville.
81 Acute Dilatation of the Stomach. C. P. McNabb, Knoxville.
82 Abdominal Operations During Pregnancy. J. A. Gaines, Nashville.
83 Professional Courtesy and Unity. E. H. Jones, Murfreesboro.

79. **Retention of Urine.**—Happel reports a case of retention of urine in a new-born female child, and from a consideration of the case emphasizes the following points: 1. The meatus urinarius is not always to be found where you are told to look for it. 2. Although a two months' old child normally urinates every 30 minutes, the child in the case reported did not pass a drop of urine in at least sixty hours. 3. Aspirating the bladder on two successive days did no harm, and was adopted in preference to anesthetizing the child for catheterization. 4. The successful catheterizing of the child under an anesthetic when the bladder, being reduced in size, ceased to drag the meatus upward. 5. The catheter was retained in the bladder for forty-eight or more hours. 6. To make the bladder resume its function, the catheter was stopped up for several hours, then the plug removed and the urine allowed to escape, thus encouraging the bladder contraction. 7. The small amount of inflammatory trouble resulting from the use of the aspirator and the retention of the catheter, with the prompt response to hexamethylenamin and washing out of the bladder, are worthy of note.

Southern Medical Journal, Nashville

November

84 Treatment of Compound Fractures. D. Eve, Nashville.
85 Decompressive Operations for Relief of Intracranial Pressure. G. Torrance, Birmingham, Ala.
86 Cases of Pellagra. J. M. King, Nashville.
87 *Case of Blastomycosis. W. Litterer, Nashville.
88 Diagnosis of Sarcoma. W. A. Bryan, Nashville.
89 *Intestinal Autointoxication. A. Dixon, Henderson, Ky.
90 Complete Operation for Suppurative Appendicitis. G. A. Hendon, Louisville, Ky.
91 Internal Secretions. J. P. Keller, Nashville.

87. **Blastomycosis.**—Litterer reviews the history of our knowledge of blastomycosis and reports a case of the localized affection cured by operation, with pathologic, bacteriologic and microscopic pathologic reports. He reports the case for the following reasons: First, to stimulate a more thorough search for the condition, which is certainly within our midst unrecognized. Second, because of its geographic peculiarity, it being largely confined to a few localities in America, particularly in the Mississippi Valley, though isolated cases have been reported from practically every quarter of the globe. Third, to emphasize the fact that the disease is commoner than the recorded cases would seem to show, due to its resemblance to many of the less rare conditions, such as all forms of tuberculosis, epithelioma, mycosis fungoides, vegetating syphiloderm, etc. Fourth, from the fact that so far as he is able to determine in the literature, this is the first recorded case this far south in which the diagnosis has been not only made by microscopic findings, but confirmed by the isolation and cultivation of the pathogenic yeast.

89. **Intestinal Autointoxication.**—Dixon reviews the writings of Bouchard and Brunton on intestinal intoxication, and discusses the pathology of the various forms. Nature gives us the cue in treatment, by inducing vomiting and purging, which are plain signs that the economy is trying to rid itself of noxious material that interferes with normal metabolism. The stomach should be washed out with sterilized hot water and a dose of castor oil given; Dixon has substituted this for colonic irrigation, which he believes to be a delusion, the tube simply coiling on itself so that no water ever reaches the colon. The castor oil is followed by copper arsenite, guaiacol carbonate or bismuth subgallate, and a hypodermic of morphin, ¼ gr., and atropin 1/150 gr. A rigid abstinence from solid food for a few days is required. Many neurasthenics are benefited by a long sea voyage on a slow vessel. The Weir Mitchell treatment is suitable in many cases. Suggestion, without the various additions that in composition constitute the mental therapeutic properties, is of value.

Interstate Medical Journal, St. Louis

November

92 *Cause of Failure in the Treatment of Tuberculosis. F. M. Pottenger, Monrovia, Cal.
93 *Nutritive Disturbances from the Fat in Milk. J. Zahorsky, St. Louis.
94 Addison's Disease. L. H. Hempelmann, St. Louis.
95 An Interesting Gall Bladder Case. W. S. Deutsch, St. Louis.
96 The Case of Jonathan Swift. G. M. Gould, Ithaca, N. Y.

92. This article also appeared in the *Lancet-Clinic*, Nov. 7, 1908.

93. **Fat Indigestion in Children.**—Zahorsky discusses the older view, that the greatest difficulties to digestion in infants are offered by the proteids, and contrasts it with the latter view, that milk indigestion means fat indigestion, and that an enterogenic acidosis lies at the root of the trouble. He reports cases, the history of which he can not reconcile

with the acid-intoxication hypothesis. He is still unable to attribute all the faults of indigestion to the fat, yet believes that we have been laying too much stress on the proteids. Skimmed milk does not solve our difficulties. It is a well-known clinical observation that most infants are constipated on cow's milk that is not decomposed by bacteria. Certified milk usually induces constipation and the stools are hard and light. Yet these infants do well and escape nutritive disorders. The physiologic chemistry of digestion and metabolism must be thoroughly elucidated, but the mistake has been made of overthrowing or disregarding clinical experiences of ages, because test tubes do not show the inferred reactions. "The history of the past shows that the clinical phenomena recorded must be explained by the laboratory and not set aside."

Monthly Cyclopedia and Medical Bulletin, Philadelphia

November

97 Treatment of Tuberculosis of the Lungs. J. Walsh, Philadelphia.
98 Diagnosis and Treatment of Hemorrhoidal Disease. C. F. Martin, Philadelphia.
99 Some Aspects of Alcoholism. A. O'Malley, Philadelphia.
100 Foreign Bodies in the Iris. G. O. Ring, Philadelphia.
101 *Present Status of the Opsonic Theory and Bacterial Therapy. N. Gildersleeve, Philadelphia.
102 Acne Rosacea and Psoriasis. J. V. Shoemaker, Philadelphia.
103 Relation Between Retinal Hemorrhages and High Arterial Pressure. L. W. Fox and W. C. Batroff, Philadelphia.
104 Bronchial Asthma. H. J. Smith, Philadelphia.

101. **Opsonic Theory.**—Gildersleeve has carefully watched the results following the use of both stock and autogenous vaccines, and concludes that autogenous vaccines are in most cases of more value than stock, although he has had better results with polyvalent gonococcus vaccine than with one from the patient. How long vaccines retain their potency is unknown. In view of the present unsettled condition, he applauds those manufacturers who refuse to market the vaccines. The article concludes as follows: The vaccines have come to stay, and we can only ask the profession to be patient and not condemn bacterial therapy because they can not employ it through lack either of knowledge or of time, not to employ it improperly, but to leave it in the hands of those skilled in its use, until the time comes when definite rules can be laid down for the use of vaccines, so that the practitioner can control the inoculations by clinical manifestations.

Therapeutic Gazette, Detroit

December

106 *Prevention, by Operation and Other Methods, of Retroversion of the Uterus After Childbirth. E. P. Davis, Philadelphia.
107 Three Cases of Rupture of the Uterus. F. C. Hammond, Philadelphia.
108 Some Relations of the Thyroid Gland. S. P. Beebe, New York.
109 Personal Experiences in the Surgery of Simple Types of Goiter. J. M. Wainwright, Buffalo.
110 Use of the X-Ray in Exophthalmic Goiter. J. C. Price, Scranton, Pa.
111 Surgical Treatment of Malignant Goiter. E. Martin, Philadelphia.

106. Published in the *Pennsylvania Medical Journal*, November, 1908, and abstracted in THE JOURNAL, Dec. 19, 1908, p. 2189.

Louisville Monthly Journal of Medicine and Surgery

December

112 *Present Status of Organotherapy. D. L. Edsall, Philadelphia.
113 *Practical Notes on Vesical Tumors. G. F. Lydston, Chicago.
114 Atypical Typhoid. B. C. Frazier, Louisville.

112, 113. Published in the *Lancet-Clinic*, Nov. 28, 1908, and abstracted in THE JOURNAL, Dec. 19, 1908, p. 2186.

American Journal of Orthopedic Surgery, Philadelphia

November

115 Present Day Conception of Acute Anterior Poliomyelitis. B. Sachs, New York.
116 Ultimate Results in Surgical Treatment of Infantile Paralysis. E. H. Bradford and R. Soutter, Boston.
117 Muscle Transference with Particular Reference to Operative Technic. S. J. Hunkin, San Francisco.
118 *Surgery of the Peripheral Motor Nerves. A. S. Taylor, New York.
119 Volkmann's Ischemic Paralysis and Contracture. R. H. Sayre, New York.
120 *Paralysis of Shoulder: Its Mechanical Treatment. D. Silver, Pittsburg, Pa.
121 *Thyroid Spine. G. B. Packard, Denver, Colo.
122 *Actinomycosis of the Ribs and Vertebræ. J. K. Young, Philadelphia.
123 Congenital Scoliosis. N. Allison, St. Louis.

118, 120, 121. Abstracted in THE JOURNAL, Aug. 8, 1908, pp. 525, 526, 528.

122. Abstracted in THE JOURNAL, July 25, 1908, p. 344.

Buffalo Medical Journal

December

124 *Extrauterine Pregnancy and Report of Cases. H. E. Hayd, Buffalo, N. Y.
125 Anesthesia. C. C. Frederick, Buffalo, N. Y.
126 Artificial Dilatation of the Cervix in Obstetrics. J. E. King, London.

124. A similar paper by this author was abstracted in THE JOURNAL, Oct. 17, 1908, p. 1355.

Journal of Ophthalmology and Oto-Laryngology, Chicago

November

127 *Ophthalmia Neonatorum. W. O. Nance, Chicago.
128 Cholesteatoma Causing an Erosion into the Horizontal Semicircular Canal, with Methods for Examining the Vestibular Apparatus. G. E. Shambaugh, Chicago.
129 Abscess of Inferior Turbinal. K. W. Baldwin, Philadelphia.

127. Abstracted in THE JOURNAL, June 27, 1908, p. 2152.

Journal Kansas Medical Society, Kansas City

November

130 Hysteria. O. S. Hubbard, Parsons.
131 Acute Dilatation of the Stomach. H. Wilkinson, Kansas City.
132 An Iniencephalus. E. T. Shelly, Atchison, Kan.
133 The Roentgen Ray as a Diagnostic and Therapeutic Aid. E. H. Skinner, Kansas City, Mo.
134 Injuries to an Eye. W. H. Graves, Pittsburg, Pa.
135 Osteopathy and the Public Press. F. A. Carmichael, Goodland.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 19

1 *Mitral Stenosis. Sir J. Barr.
2 *Occurrence of Heartblock in Man and Its Causation. T. Lewis.
3 Retardation of the Pulse Wave in Aortic Regurgitation. W. Broadbent.
4 Malformations of the Hind End of the Body (continued). A. Keith.

1. **Mitral Stenosis.**—Parr confines his attention to the debatable points in the clinical manifestations of the disease. The disease is easily diagnosed apart from the murmur (presystolic or auricular-systolic), but such diagnosis is very imperfect unless it takes into account the extent of the lesion and its effects. Rheumatism holds the first place in its causation. Children are very liable to rheumatism, though the other manifestations may escape notice and endocarditis seem to be the only gross expression. Mitral stenosis is frequently associated with chorea. It is more common in females than in males, because these two predisposing diseases are more common. Its course is usually slowly progressive, and while it ordinarily leads to the death of the individual, under proper care and treatment it is quite compatible with a fairly long existence. The deformity produced in the valves is of two kinds, the funnel form and the buttonhole. Contrary to other authorities, Barr finds that while the buttonhole variety is scarcely known in children it is not much more common in the adult than the funnel form. In the evolution of mitral stenosis, excessive calcium ions in the blood play a very important part. In diagnosis it is necessary to do more than recognize a presystolic murmur; we want to know the nature of the obstruction, the size of the orifice, and the effect on the circulation. When the murmur is well pronounced the interference of the physician is uncalled for. In many cases in which it is absent, judicious treatment may be of great value. Sometimes the only murmur is a mitral systolic, due to regurgitation. The treatment of these two conditions is essentially different. Barr discusses the physical diagnosis at great length. He points out that it is not sufficiently recognized that the heart is not a single organ, but two organs, each of which has its own definite work to perform, linked together for mutual assistance in cases of stress or difficulty. Barr says that the myogenic theory of contraction

is plausible and deserves to be true, but like a good many other theories, it has not been considered necessary to establish the truth of the premises; not one scintilla of evidence has ever been adduced to show that the muscle cells, or any node or set of cells, generate any stimulus which excites contraction, and there is no information as to the nature of the stimulus. This theory tends nowhere but to the grave, whereas, if one believes that the rhythmic contraction of the heart is maintained by the diastolic tension, one can often save lives by putting the theory into practice. Many deaths from syncope could be averted by simply hanging the individual up by the feet. This has been long known in chloroform syncope, but it should be firmly inculcated in every ambulance course.

2. **Heart Block.**—Lewis discusses the evidence for conduction by muscular continuity in mammalia, the evidence of heart block in man, and the evidence for associating heart block with damage to the auriculoventricular bundle. He concludes: Surveying the evidence as a whole, we may say that, knowing that heart block can occur in man, and that it may be associated with lesions of a bundle which has been shown to be essential to conduction in the lower animals, we are justified in concluding that heart block in man may arise as the result of such a lesion; but we must bear in mind that such a conclusion is open to limitation, and we are not justified at present in assuming that it will invariably arise from such a lesion, or that it is invariably dependent on such a lesion.

Lancet, London

December 19

5 *Treatment of Wounds. Sir W. W. Cheyne.
6 Treatment of Gout by Thyminic Acid. R. Fenner.
7 Otosclerosis: Etiology, Diagnosis and Treatment. A. R. Tweedie.
8 *Mercurial Reaction as an Element in Diagnosis of Syphilis. F. Curioni.
9 Ruptured Small Intestine. L. E. C. Norbury.
10 Method of Performing Abdomino-Perineal Excision for Carcinoma of the Rectum and Terminal Portion of the Pelvic Colon. W. E. Miles.
11 Treatment in a Case of Arthritis Deformans. F. Booth.
12 Streptococcal ("Septic") Throats. J. O. Hollick.

5. **Treatment of Wounds.**—Cheyne discusses the evolution of the modern treatment of wounds, and sums up his criticism on the most recent ideas, by saying that the pendulum has swung too far in the direction of the avoidance of antiseptics, and that the reasonable use of all the means at our disposal for securing asepticity of wounds will furnish more constant results. He takes exception to the employment of dressings which do not contain an antiseptic in sufficient amount to render the discharges that flow through them unsuitable for the growth of bacteria, also to the absence during the operation of antiseptic solutions in which hands, instruments, etc., may be washed from time to time to insure a continued asepsis, and he considers the substitution of gauze plugs for drainage tubes, more especially for the drainage of abscesses and sinuses, a retrograde step. Minor points are the use of swabs instead of marine sponges and the avoidance of catgut. The extreme view has, however, done good, by directing attention to the value of heat as a disinfectant, to the sterilization of instruments, etc., and to the diminishing of dust; but he thinks an attempt to treat wounds without any antiseptics a very unnecessary complication, for it adds to the difficulty of securing asepsis; and if the surgeon has to keep his mind intently fixed simultaneously, on two exacting processes, surgical technic and bacteriologic technic, he is the more apt to fall down on one of them. Cheyne says that his own results and those of other surgeons who use antiseptics judiciously are in every way as good as those obtained by the more elaborate aseptic precautions. They are not troubled with sepsis or stitch abscess.

8. **Mercurial Reaction in Diagnosis of Syphilis.**—Curioni, noting during the treatment of a number of suspectedly syphilitic patients that some of them were strangely intolerant of mercury, and that these patients generally proved to be non-syphilitic, the idea occurred to him that persons with syphilis tolerated mercury much better than normal subjects. He therefore made comparative tests of the elimination of mercury in the urine of the healthy and of the syphilitic. An injection of 0.01 gm. of mercury perchlorid in 1 c.c. of distilled water was given about 11 a. m. to the two set of subjects. The urine was collected at 7 p. m., 5 or 6 hours later, and the following morning between 8 and 9. The specific reaction was then tested by Vitali's method, which the author details. As a result of these investigations Curioni formulates the following conclusions:

1. The mercurial reaction in the urine of the healthy is much more evident than in the syphilitic, in which sometimes there is no result at all; which means that the elimination of mercury in the urine of the syphilitic is always much slower than in the healthy.
2. The mercurial reaction is *nil*, or nearly so, in cases of syphilis recently contracted, especially when symptoms are apparent; and the reaction is only slightly evident, and never so well as in normal cases, in syphilities in whom two or three years have elapsed since the appearance of the ulcer.
3. Finally, in cases of long standing, of say, 10 or 12 years, the mercurial reaction is as evident as in normal cases. (Mercurial reaction is positive.)

Curioni believes early treatment inadvisable, because the action of the antigen being paralyzed by the mercury the production is stopped of the special antibodies which will be the natural defense of the organism, provided for the true destruction of the virus. He suggests the possible utility of his test not only for clearing up suspicious cases, but in ascertaining whether a person who presents no symptoms of acquired syphilis has at some time past been infected; also in tabes or progressive paralysis not from hereditary syphilis.

Medical Press and Circular, London

December 16

13 Ophthalmia Neonatorum. S. Mayou.
14 Use of Colloidal Mercury by Intravenous and Intraspinal Injection, and Its Mode of Action. P. Claisse and E. Joltrain.
15 Relation of Clinical Laboratory Methods to the Work of the General Practitioner. R. Weiss.
16 Mammary Carcinoma and Its Surgical Treatment. E. H. Taylor.

Clinical Journal, London

December 2

17 *Suprapubic Prostatectomy. W. B. Clarke.
18 *Poisoning from Some Metals and From Dust. F. M. Sandwith.
19 Case in which Portion of a Lung was Excised. J. R. Morison.

December 16

20 Cancer. T. Bland-Sutton.
21 Acute Lymphocythemia in Children. T. R. C. Whipman.
22 Muscular Atrophy. A. Whiting.

17. **Suprapubic Prostatectomy.**—Clarke considers the suprapubic operation destined to supersede the perineal, because it embodies a great surgical principle, namely, "see what you are about and don't be content with feeling that which it is quite possible to see." He describes the technic of the operation, and says that he has purposely refrained from alluding to the time honored custom of rectal examination in cases of prostatic enlargement, because in most instances it is absolutely useless. "What you want to determine is how far the urinary outflow is obstructed and this can only be discovered by the passage of a catheter; the size of the prostate is no gauge of its obstructive power."

18. **Metal and Dust Poisoning.**—Sandwith discusses various industrial diseases, arsenic, copper, brass and mercury poisoning, the diseases of iron and steel workers, especially steel grinding, the health of underground railway workers, workers in cotton mills, linen and jute factories, poisoning by African boxwood, rag sorters' disease, chimneysweep's cancer, and the condition of tin plate workers.

Australasian Medical Gazette, Sydney

October

23 The Mental Factor in Medical Practice. G. E. Rennie.
24 *Prophylaxis of Puerperal Eclampsia. D. Hardie.
25 *Albuminuric Retinitis of Pregnancy. J. L. Gibson.
26 Postdiphtheritic Heart Failure. J. M. Gill.
27 Gastroenteritis in Children—Causes—Prophylaxis and Treatment. E. A. Officer.
28 Diagnosis of Diseases of the Urinary Tract. R. C. Foster.
29 Fatal Case of Arsenic Poisoning. C. H. E. Lawes.

24. **Puerperal Eclampsia.**—Hardy discusses the prophylaxis of this disease and as measures for the treatment of impending eclampsia, places first, absolute withdrawal of food, even milk, water alone being given for from 36 to 48 hours, when

a milk diet may be resumed. Second, an enema of saline fluid into the lower bowel overy 2 to 4 hours. Third, the skin must be made to act by plenty of blankets and hot bottles. When free perspiration is induced the question of the advisability of terminating pregnancy must be decided. The object is, wherever or whatever the *fons mali* may be, "to throttle down the inlet and open well the exhaust." He urges the necessity of examining the urine weekly from the beginning of the eighth month, and in primigravidæ the seventh month onward, and twice a week if suspicious symptoms arise.

25. **Albuminuric Retinitis of Pregnancy.**—Gibson reports cases and concludes that it is the duty of the medical attendant, when albuminuric retinitis supervenes, to bring on labor without delay, and to refuse to take the responsibility of the case if his advice is not adopted.

Journal of Tropical Medicine, London

December

30 Dengue in Fiji. A. Montague.
31 Guinea Worm. W. H. Graham.
32 Hemogregarines of Snakes (to be continued). L. W. Sambon and C. G. Seligmann.
33 Investigation of Cerebrospinal Fever in the Northern Territories of the Gold Coast in 1908. A. E. Horn.

Glasgow Medical Journal

December

34 Traumatic Rupture of Small Intestine. G. H. Edington.
35 Gastrototomy for Foreign Body. D. Macartney.
36 Medical Practice in Pondoland, South Africa. J. G. Millar

Journal of Laryngology, Rhinology and Otology, London

December

37 Effect on Vocal Pitch of the Contracture of the Thyroarytenoid Muscles. J. D. Lithgow.
38 Cases of Laryngostomy. Sargnon and Barlatier.
39 Condition of the Vestibular Apparatus in a Series of Cases of Deafness of Non-Suppurative Origin (continued). N. H Pike.

Bulletin de l'Académie de Médecine, Paris

November 24, LXXII, No. 38, pp. 405-433

40 *Sunlight Treatment in Mountain Climate. (Les cures solaires directes, dans les stations d'altitude.) H. Hallopeau and Rollier.

December 1, No. 39, pp. 435-466

41 *Action of Sodium Cinnamate in Pulmonary and External Tuberculosis. (De l'action du cinnamate de soude dans la tuberculose pulmonaire et les tuberculoses externes.) P. Reynier.
42 Respiratory Interchanges in the New-born and Index of Oxygenation. (Les échanges respiratoires des nouveau nés et l'indice d'oxygénation.) M. G. Weiss.

40. **Treatment of Surgical Tuberculosis by Direct Sunlight in the Mountains.**—Rollier presented to the Academy 185 photographs of 35 tuberculous patients treated by heliotherapy at a high altitude. His experience includes nearly 150 cases of tuberculosis of various locations, exclusive of the lungs, and it has convinced him that the mountain sunlight has a remarkable curative action on tuberculous processes in general. It seems as if the tubercle bacillus ceases to find a favorable medium for its proliferation as the tissues and organic juices become modified by the conditions in the mountains.

41. **Sodium Cinnamate in Tuberculosis.**—Reynier and Blusson have been giving sodium cinnamate a thorough trial in 21 cases of pulmonary and external tuberculosis, the outcome representing, they think, positive progress in the treatment of the disease. In 10 cases the bacilli vanished from the sputum and the stethoscope showed approximately normal conditions out of the 19 patients who showed the most benefit. Their experience seems to suggest that this drug combines with the toxins engendered by the bacilli, transforming them into non-toxic compounds. Favorable voices have been raised here and there since Landerer first proclaimed the efficacy of sodium cinnamate, and it has been successfully used in Spain, but Reynier asserts that it has not been given generally the attention it deserves. He prefers to give the drug in subcutaneous or intramuscular injections, up to a maximum of 0.3 or 0.4 gm. (from 4.5 to 6 grains) in two days. His patients were mostly adults.

Presse Médicale, Paris

November 28, XVI, No. 96, pp. 769-776

43 Experimental Autodigestion of the Stomach. (Auto-digestion expérimentale de l'estomac.) A. Frouin.

December 2, No. 97, pp. 777-784

44 *To Reduce the Mortality from Cancer of the Uterus. F. Jayle.
45 Light-Colored Liver Cells. (Etat clair des cellules hépatiques.) P. Ramond.

December 5, No. 98, pp. 785-792

46 *Criminal Law and Psychiatry. (Droit criminel et médecine mentale.) M. Dupré.

December 9, No. 99, pp. 793-800

47 *Adamantine Epithelioma. L. Boidin and C. Delval.
48 Tetanus Originating in the Uterus. A. Brault and G. Faroy.
49 Isotonic Collyria. A. Cantonnet.

44. **Causes of Mortality from Uterine Cancer.**—Jayle's experience with hundreds of cases of cancer of the uterus has confirmed the fine results from extensive excision when the cancer is localized in the uterus, but cancer still localized in the uterus is extremely rare, as patients do not apply to the surgeon until too late. They are misled by the false and dangerous notion that there may be a physiologic hemorrhage from the uterus during or after the menopause. He advocates that every woman over 35 should be examined by a physician every three months, especially in case of cancerous antecedents or a chronic affection in the uterus or adnexa, and particularly in case of cervical metritis. Even when the cancer has passed beyond the uterus, radical removal may give long survival and there need be no hesitation about operating, even in somewhat advanced cases, if the general condition is good and the patient not too young. The iliac glands should be removed with the uterus, especially in young women with cancer of the cervix.

46. **Insane Criminals Before the Law.**—Dupré reviews the history of the insane condemned in ignorance of their abnormal mental condition. He says that during the five years 1890-1895 255 insane persons were sentenced in France for deeds for which they were not responsible, as directly established later, and he urges the necessity for a clinical course in psychiatry before a lawyer is admitted to the practice of criminal law or to the bench.

47. **Adamantine Epithelioma.**—Boidin and Delval describe two cases which confirm the good prognosis and the origin of these tumors in paradental, epithelial débris scattered around the jaw. Extensive excision of the tumor, without encroaching much on sound tissue, is sufficient and recurrence need not be feared. All the experience to date sustains the assumption that the tumor never spreads to the glands. Differentiation is sometimes difficult in the superficial form, but histologic examination will remove all doubt. They describe two cases in detail, with illustrations of the findings.

Revue de Médecine, Paris

November, XXVIII, No. 11, pp. 943-1008

50 Paroxysmal Cyanosis with Congenital Malformation of the Heart. (Cas de malformation congénitale du cœur avec cyanose paroxystique.) A. Espine and H. Mallet.
51 Syndromes of Insufficiency of Several Glands. (Syndromes d'insuffisance pluriglandulaire.) H. Claude and H. Gougerot. Commenced in No. 10.
52 The Urine in Gastrointestinal Autointoxication. (L'urine dans l'intoxication digestive.) H. Labbé and G. Vitry.
53 *Naturally Faint Pulse. (La microsphygmie.) C. Richet and F. Saint Girons.
54 Pathogenesis of Bilious Hemoglobinuric Fever. (Pathogénie de la fièvre hémoglobinurique. bilieuse.) S. J. Kanellis.

53. **Habitually Faint or Almost Imperceptible Pulse.**—Richet and Saint Girons have observed sixteen cases of what they call "microsphygmia." It seems to be due to spasmodic contraction of the muscular layers of the vessels, not to any anatomic lesion. They have never encountered this microsphygmia except in idiots, and predominantly in those with trophic disturbances and an inherited taint—tuberculosis, syphilis, alcoholism or lead poisoning.

Semaine Médicale, Paris

December 2, XXVIII, No. 49, pp. 577-588

55 Phlegmonous Gastritis. L. Cheinisse.

December 9, No. 50, pp. 589-600

56 The Placenta Theory of the Origin of Eclampsia. R. de Bovis.

Beiträge zur Klinik der Tuberkulose, Würzburg

XI, No. 2, pp. 79-269. Last indexed Dec. 12, 1908, p. 2095

57 *Specific Hypersusceptibility and Immunity to Tuberculosis. (Spezifische Ueberempfindlichkeit und Tuberkuloseimmunität.) P. H. Römer.

58 Complement Fixation by Antibody in Blood of the Tuberculous. (Die durch Komplementbindung nachweisbaren Tuberkulose-Antikörper im Blute von Phthisikern.) S. Cohn.
59 *Tuberculous Infection and Clinical Tuberculosis. (Tuberkulöse Infektion und tuberkulöse Erkrankung.) E. Meissen.
60 Bovine Tubercle Bacilli in Sputum of Consumptives and Their Importance for Treatment of Chronic Pulmonary Tuberculosis. (Vorkommen von Perlsuchtbazillen im Sputum der Phthisiker und ihre Bedeutung für die Therapie der chronischen Lungentuberkulose.) G. Schröder.
61 Importance of Vital Capacity for Origin, Spread and Healing of Pulmonary Tuberculosis. (Bedeutung der Atmungsgrösse für die Entstehung und die Ausdehnung bezw. Heilung der Lungentuberkulose.) N. P. Tendeloo.
62 Diagnostic Uncertainty of Ocular Tuberculin Reaction. (Diagnostische und prognostische Bedeutung der Konjunktivalreaktion.) O. Roepke.

57. **Specific Hypersusceptibility and Immunity to Tuberculosis.**—Römer's further research confirms the fact of the resistance of tuberculous individuals to renewed infection from without, and he presents arguments to show that this is connected with hypersusceptibility to the tubercle bacillus and also with immunity. Some of the animals with slow, chronic tuberculosis bore renewed infection without appreciable injury, although it was rapidly fatal for the controls. That is, the chronic tuberculosis conferred immunity on the animals. He compares it to a fortress conquered by surprise but finally driving out the invaders, although still suffering from the consequences of the invasion. Henceforth it is on the alert, and opposes effectual resistance to renewed invasion, unless the invaders come in overwhelming force. He regards an intense reaction to the local tuberculin test as a good omen. A tuberculous infection, if weak, and if it does not materially affect the health of the individual, not only is not harmful, but is directly useful, as it protects against further infection. The logical consequence is that severe, massive infection must be warded off, but that it is futile and useless to attempt to protect mankind from all contact with the tubercle bacillus. The campaign against tuberculosis should be directed against phthisis rather than against tuberculosis. When one member of a family has phthisis, the children are more exposed to contagion from it than the other members of the family. The great majority of mankind have been infected with tuberculosis before reaching adult age, and the aim should be to prevent massive infection of children. The battle should begin in the home, in the family, where it threatens most the younger children.

59. **Tuberculous Infection and Tuberculosis.**—Meissen protests against the assumption of direct contagion of tuberculosis, showing that those most exposed seldom acquire the disease, nurses, consorts and the residents of health resorts. He argues that as one is protected against the invasion of tubercle bacilli, which form small, latent foci, which may possibly but not necessarily lead to clinical tuberculosis. For the bacilli to develop clinical manifestations, predisposing factors are necessary. The latter are thus really responsible for the tuberculosis; the tubercle bacillus is only the remote cause. Tuberculous infection and tuberculosis are far from synonymous terms. The prospects for successfully combating the disease are shown to be much brighter with this conception.

Berliner klinische Wochenschrift

November 3, XLIV, No. 18, pp. 2129-2176

63 *Gastric Ulcer Perforating into the Pancreas. (Behandlung eines in das Pankreas perforierten Magengeschwürs.) R. Klapp.
64 *Treatment of Neuralgia with Injections of Alcohol. W. Alexander.
65 Bilateral Crural Paralysis After a Gynecologic Operation. (Beiderseitige Cruralislähmung nach gynäkologischer Operation.) K. Mendel and B. Wolff II.
66 Digestion of Living Tissue. (Zur Frage der Verdauung lebenden Gewebes.) H. Kathe.
67 Micromelic Dwarf Growth, not Congenital. (Ueber das klinische Bild der Achondroplasie bei Erwachsenen und eine ihr sehr ähnliche bisher noch nicht beschriebene Form von mikromelen Zwergwuchs bei einer 56 jährigen Frau.) P. Schrumpf.
68 *Aortic Insufficiency and Syphilis. J. Citron.
69 The Hessing Orthopedic Technic. M. Böhm.
70 Pathologic Anatomy of Appendicitis. (Wurmfortsatzentzündung.) R. Beltzke.

63. **Treatment of Gastric Ulcer Perforating into the Pancreas.**—Klapp reports a case of gastric ulcer with symptoms suggesting cancer. On opening the abdomen nothing abnormal was found on the stomach until the discovery of a tumor in the rear wall, just below the cardia, adherent to and perforating into the pancreas. The cachexia was so extreme and the site was so inaccessible that further intervention seemed too hazardous, but Klapp removed the spleen and thus obtained access to the tumor which was then easily excised, with the rapid recovery of the patient.

64. **Treatment of Neuralgia with Injections of Alcohol.**—Alexander extols the advantages and benefits of this treatment of neuralgia, urging it in all cases before resort to operative measures. His experience has been favorable, but he emphasizes the necessity of practice on the cadaver and anatomic studies before attempting to apply this technic. Even when it is impossible to remove the constitutional cause, injection of alcohol may yet relieve the patient of pain, as in case of a brain tumor, while waiting for the exact diagnosis. In one such case the patient was relieved of pain for a year, until the intracranial cause was located. Great caution is required with this technic, he warns, for nerves with a motor element.

68. **Aortic Insufficiency and Syphilis.**—Citron relates experiences which show that the positive response to the serum test for syphilis reveals a syphilitic origin in a surprisingly large proportion of cases of pure aortic insufficiency. Even when there is congenital or other valvular or arterial trouble, specific treatment will relieve it of the burden of the superposed syphilitic lesions.

Deutsche medizinische Wochenschrift, Berlin

November 26, XXXIV, No. 48, pp. 2057-2104

71 *Treatment of Burns. (Therapie der Verbrennungen.) Pels Leusden.
72 Climate and Kidney Disease. (Klima und Nierenkrankheiten.) H. Strauss.
73 Antipneumococcus Serum. (Pneumococcenheilserum.) G. Landmann.
74 *Indirect Tuning Fork Auscultation: Phonometry. (Indirekte Phonometrie, eine exakte Methode zur Bestimmung der Organgrenzen mittels der Stimmgabel.) E. Schlesinger.
75 *Tricuspid Insufficiency and Its Symptoms. D. v. Tabora.
76 *Hypotony or Relaxation of Muscles as Early Sign of Tabes. (Messung der Hypotonie.) J. v. Cesiky.
77 Inflammatory Tumors in the Omentum. (Entzündliche Geschwülste des Netzes.) J. P. Haberern.
78 Dangers from Anomalous Color Perception in Railway Employés. (Untauglichkeit der sogenannten anomalen Trichromaten zum Eisenbahndienst.) Schlodtmann.
79 Chilling of Body Liable to Bring on Paralysis After Treatment for Hydrophobia. (Zur Frage der während oder nach der antirabischen Behandlung auftretenden Paralysen.) P. Pampoukis.

December 3, No. 49, pp. 2105-2152

80 *Treatment of Inoperable Uterine Cancer. (Behandlung des unoperablen Gebärmutterkrebses.) H. Freund.
81 *Technic for Medication by Inhalation. (Ein Halator.) B. Fränkel.
82 Transformation of Albumin During Treatment of Obesity. (Eiweissumsatz bei Entfettungskuren.) P. F. Richter.
83 Disturbances in Pancreatic Secretory Functioning, and Case of Continuous Hypersecretion. (Sekretionsstörungen des Pankreas im Anschluss an die klinische Beobachtung eines Falles von Supersecretio pancreatica continua.) A. Bickel.
84 Filariasis. zur Verth.
85 *Belt to Shut Off Circulation from the Legs During Operations. (Zur künstlichen Blutleere der unteren Körperhälfte nach Momburg.) G. Axhausen.
86 *Operative Treatment of Emphysema. (Zur operativen Behandlung des Lungenemphysems.) R. Stich.
87 *Retroflexion of the Uterus. (Zur Klinik der Retroflexio.) A. Mayer.
88 Silver Salts and Electrolysis in Gonorrheal Urethritis. (Zur Therapie der akuten und chronischen Urethralblennorrhoe.) G. J. Müller.
89 Roentgen Apparatus with Pulsating Current. F. M. Groedel, iii.
90 *Syphilis in the Husband of Patient and Professional Secrecy. (Darf der Arzt der vom Ehemanne mit Lues infizierten Frau die Natur ihres Leidens verschweigen?) N. Macry.

71. **Treatment of Burns.**—Pels-Leusden thinks that it is extremely important to promote the elimination of the toxins generated in the skin by burned tissues, flushing out the body and counteracting their depressing influence on the heart. The pulse is liable to be frequent and small, vascular tone reduced, with hemoglobinemia, hemoglobinuria and subnormal temperature. Intravenous injections of a heart tonic with an abundant supply of fluids are indicated. The patients complain of thirst and take readily strong coffee and tea, brandy and champagne by the mouth. This should be supplemented by 100 c.c. of physiologic salt solution by the rectum every 15 minutes, with intravenous saline infusion, especially when vomiting occurs, as is liable with children soon after the burn; but in older persons it does not occur until a later

stage, just before delirium or stupor. These measures may save in the border-line cases in which from one-third to one-half the surface of the body is burned. Under all circumstances the pain should be relieved, possibly with morphin, which also soothes the patient tormented by a realization of the carelessness responsible for the burn, dread of death and anxiety for the fate of his family. Local measures should be applied cautiously, as the patients are in shock. The danger from this general intoxication from the burn is generally over by the fifth or sixth day, although death may occur after eight or ten days, without question of sepsis, but with diarrhea and hemorrhage from a duodenal ulcer. For local treatment for burns in the second and third degrees he prefers Tschmarke's technic, as this prevents secondary infection and thus the epithelium retains its vitality. He treats the burned surface as if preparing it for an aseptic operation. For a small area, anesthesia of the sensory nerve trunk may suffice, but extensive burns on the head, trunk and arms require general anesthesia, for which ether is preferable to chloroform, as it raises the blood pressure. The blisters are opened and the burned area for some distance around is scrubbed with soap and water for ten minutes, then rinsed with alcohol and 1/1,000 solution of bichlorid of mercury for two minutes and then covered with gauze compresses packed thick with absorbent cotton, with non-absorbent above. The exclusion of air generally arrests the pain, but if not, morphin is given. When the serous discharge wets the absorbent dressing through, the dressings are renewed down to the gauze compress, under the most scrupulous asepsis—the physician must disinfect himself each time as for a major operation. This must be repeated as often as the dressings become soaked, which does not occur after a few days. After ten or fourteen days the dressing is thrown off and the epidermis heals over with little tendency to contracture. He does not approve of iodoform gauze for burns or any antiseptic powder on account of the danger from absorption. The painfulness and general anesthesia required for this technic are far outbalanced by the rapid healing and avoidance of secondary infection, suppuration and fever. If the burn is not recent or general anesthesia is contraindicated, he applies Bardeleben's "bismuth bandage" or powders thick with bismuth after cleansing the burned area with salt solution. He unconditionally denounces all home remedies, but advises the continuous bath as indicated, or an early injection of thiosinamin and possibly a splint to ward off contraction.

74. **Indirect Tuning Fork Auscultation.**—Schlesinger uses a phonendoscope with a tuning fork, G natural, with 48 vibrations in the second. The fork is placed on the thorax and moved along toward the phonendoscope, and the resonance suddenly increases as the fork passes the margin of the heart or other organ being examined. The technic is more instructive when the organ is outlined with the "threshold" of audible capacity. He lauds the instructive findings with this indirect phonometry in examining the lungs, liver and spleen, and in detecting incipient foci.

75. **Tricuspid Insufficiency and Its Symptoms.**—Tabora declares that the only certain sign of tricuspid insufficiency is the systolic, positive liver and venous pulse, and eventually a systolic pulsation in the bulb.

76. **Relaxation of Muscles as Early Sign of Tabes.**—This communication from Jendrassik's clinic at Budapest calls attention to the diagnostic importance of the lack of normal tone in the muscles in the incipient phase of tabes. A method is described by which it is possible to measure the degree of this hypotony. As the patient stands, the distance from the floor to the greater trochanter and to the seventh cervical vertebra is measured. The patient is then asked to stoop forward as far as possible, with the knees stiff, and the distance from the floor to the seventh cervical vertebra is again measured as the patient bends the trunk forward. In health and in all other affections it is impossible to bend the trunk forward so that this vertebra is brought to or much below the level of the trochanter, but the diminished tonicity of the muscles in tabes allows stooping until this vertebra is 21 or more cm. below the level of the trochanter. In two cases of abducent paralysis he diagnosed incipient tabes from the high degree of hypotony shown by the test, and his diagnosis was confirmed by the further course of the cases.

80. **Operative Treatment of Inoperable Uterine Cancer.**—Freund advocates abdominal removal of as much as possible of the growth, even when a radical operation is out of the question. In seven patients thus treated the results were satisfactory, abolishing the pains, the discharge and the repulsive odor. This effect alone is enough to justify the operation, as the relief to the patient is so intense. The operation can be completed in forty minutes on an average, and the patients bear it remarkably well. The general health shows promptly the great benefit from the removal of the compression from the tumor and of the decaying masses. Spinal anesthesia is particularly useful in these cases. In the usual operative cases he does not attempt much preparation, but the success in the palliative cases depends on the preparatory measures for days or weeks beforehand. The cancer focus is curetted and cauterized, with the patient slightly anesthetized, and the focus is then treated with astringent and disinfecting applications, for which he has found bolus alba, tannin and salicylic acid useful, with repeated rinsing with 3 per cent. solution of peroxid of hydrogen, but no tampons. In operating, the protection of the peritoneum is the main point. No resection as for a radical operation should be attempted. Unless the field of operation can be roofed over completely, with enough intact peritoneum in front of and behind the uterus to cover over the site, the removal of the cancer should be abandoned and nothing done beyond ligating the arteries. He has found that stovain spinal anesthesia is able in some cases to reduce the sensibility of the nerves so that the uncontrollable pain can be kept down afterward by morphin, which had previously been ineffectual. All his patients have been relieved of hemorrhages and discharges during the interval since the operation, up to three years in one case.

81. **The Inhalator.**—Fränkel gives an illustrated description of a simple vapor lamp to vaporize menthol as the patient sleeps. It burns for ten hours, keeping the fluid at 70 C., the proper temperature for vaporizing menthol. He has applied this method in 20 cases of superficial processes in the larynx, with excellent results. It also has a favorable influence on pulmonary lesions. Some of his patients were spared curetting by the use of this inhalator.

85. **To Expel the Blood from the Legs by Momburg's Technic.**—Axhausen adds another to the four cases on record in which operations were performed with the blood shut off from the legs by a rubber tube wound two or three times around the waist. Momburg's case here described is the most severe among those yet reported, the progress of a tuberculous process in the hip joint after exarticulation requiring resection of parts of the pelvis. The constricting belt was not applied until the patient was completely under the influence of the anesthetic, to insure the relaxation of the muscles and spare the patient the disagreeable sensation of the constriction. The femoral pulse is the index for the degree of constriction to be attained and maintained, and this is not materially influenced by the general anesthesia. A rubber drain tube, the width of a finger, was wound around three times, doubled, after raising the remaining leg, lowering the leg after the constriction. The reliable hemostasis gives the operator a feeling of security unobtainable by compression of the aorta by a finger or pad. There was no hemorrhage; only a few drops of blood oozed from the spongy part of the bones in the case reported. The constricting belt was in place for 45 minutes in all. No mishaps have been reported with this technic to date.

86. **Operative Treatment of Emphysema of the Lung.**—Stich adds another to the eight cases on record of chondrotomy according to Freund's method of treating emphysema of the lung, the result of pathologic changes in the thorax. These changes are revealed by primary changes in the cartilage, malformation of the costal cartilage and the position of the diaphragm. The first five ribs were resected on both sides, but the intervention was not especially difficult or dan-

gerous. The benefit from the operation becomes evident at once.

87. **Retroflexion of the Uterus.**—Mayer has become convinced that retroflexion *per se* scarcely ever requires any treatment, particularly in nulliparæ. He warns against local examination of neurasthenic women, and of nulliparæ in particular. The symptoms ascribed to the retroflexion in many cases are merely the results of constipation and the resulting pressure on the sacro-uterine ligaments. The sacral and abdominal pains are often a nervous symptom or local complication. Among the latter a tendency to prolapse is the most important, and the disturbances generally vanish as this tendency is corrected. A simple round ring without regard to the displacement will sometimes suffice for this.

90. **Syphilis in the Consort of Patient.**—Macry urges the necessity for informing the wife, even against the will of the husband, of the syphilitic nature of the disturbances for which the physician has been consulted. He describes a typical case in which the first physician consulted instituted specific treatment, but without informing the patient of the nature of her trouble. The consequence was that the course of treatment was entirely inadequate, as the importance of the matter was not appreciated, and this disregard avenged itself later.

Medizinische Klinik, Berlin

November 15, IV, No. 46, pp. 1747-1784

91 Acne. P. G. Unna.
92 *Hemolytic Substances in Stomach Content in Diagnosis of Cancer. (Vorkommen hämolytisch wirkender Substanzen im Mageninhalt und ihre Bedeutung für die Diagnose des Magenkarzinoms.) J. Fey and G. Lefmann.
93 Behavior of Systolic Murmurs on Change of Position. (Verhalten systolischer Geräusche bei Lagewechsel.) M. Herz.
94 Recurrence of Scarlet Fever. (Scharlachrezidiv.) E. Fürth.
95 Spastic Obstipation. (Gibt es eine spastiche Obstipation?) M. Pickardt.
96 Alcohol and Life Expectancy. (Alkohol und Lebensdauer.) Stille.
97 *Treatment of Pancreas Diabetes. F. Bruck.
98 Intravenous Anesthetization. (Intravenöse Narkose.) J. Nerking and W. Schürmann.

November 22, IV, No. 47, pp. 1785-1822

99 *Treatment of Clubfoot in Infants by General Practitioner. (Behandlung des Klumpfusses beim Säugling durch den praktischen Arzt.) W. v. Oettingen.
100 Value of Serodiagnosis of Syphilis in General Practice. (Was leistet zurzeit die Wassermannsche Reaktion für die Praxis?) F. Hoehne.
101 *Abdominal Vascular Crises in Tabes and Their Relation to Abdominal Aortitis. (Zur Kenntnis der abdominellen Gefässkrisen der Tabiker und ihrer Beziehung zur "Aortite abdominale.") J. Pal.
102 *Treatment of Old Fractures of Patella. (Behandlung veralteter Kniescheibenbrüche.) L. Wrede.
103 *Therapeutic Application of Bromids on Experimental Basis. (Therapeutische Anwendung der Bromsalze auf experimenteller Grundlage.) H. v. Wyss.
104 Oxygenated Baths in Treatment of Neuroses. (Sarasons Ozetbäder bei der Behandlung von Neurosen.) G. Flatau.
105 Mental Work a Growth Process. (Geistige Arbeit und Wachstum.) O. Kohnstamm.

92. **Hemolytic Substance in Stomach Content in Diagnosis of Cancer.**—Fey and Lefmann have been studying the cause for the hemolytic action of the stomach content, and they report that it was pronounced in 14 out of 17 cases of various forms of gastritis, ulcer, nervous dyspepsia, etc., without a trace of malignant disease. The only feature common to all these positive cases was the constant presence of bile and trypsin. The method is not reliable, therefore, for the diagnosis of cancer.

97. **Treatment of Pancreas Diabetes.**—Bruck suggests that the antagonistic action of adrenalin and the pancreatic secretion might be utilized in the treatment of diabetes. In normal conditions the joint action of both substances prevents glycosuria, but if the pancreas secretion is lacking, the adrenalin gets the upper hand and glycosuria follows. The pancreas diabetes is therefore rather a negative pancreas and a positive suprarenal diabetes, as the over-production of adrenalin is responsible for the glycosuria. No glycosuria is observed in dogs after pancreatectomy if the suprarenal secretion is inhibited or if an active pancreas preparation is injected into the veins. He suggests that the same principle might be applied in pancreas diabetes which is the base for the treatment of exophthalmic goiter with the serum or milk of thyroidectomized animals. By excluding the adrenalin from the circulation, the milk or serum of animals thus treated might prove an effectual means of supplying the diabetic with the missing neutralizing pancreatic secretion.

99. **Treatment of Clubfoot by General Practitioner.**—Oettingen remarks that during 2,000 years of experiences with clubfoot, the important part played by the knee in the correction has been almost entirely overlooked. The deformity develops with the knee flexed to the utmost and it should be flexed at a right angle in the immobilization. This has the great advantage that the sole can be held in proper position by traction on the knee. Treatment should commence the moment the child is first presented to the physician, even if it is only one day old. No anesthesia is required, merely a stout twilled cotton flannel bandage about 4 or 5 cm. wide. The bandage is passed first around the foot after the foot and thigh just above the knee have been smeared with a soft solution of mastic which glues the fuzzy stuff firm to the skin. The bandage starts at the little toe and is wound around the foot and then passes from the little toe over the knee and is then brought around across the front of the leg to the inner aspect of the foot, forming thus a figure-of-eight bandage. Before applying the bandage he manipulates the foot to bring it with maximal outward rotation of the leg into its normal position, watching the clock to see that he does not take less than five minutes to accomplish this. During the application of the bandage the assistant holds the thigh with one hand and the middle toe of the foot with the other, not releasing it until the bandage is completed. By this means the sole of the foot is held in correction supported by the thigh, the bandage holding the foot in pronation, outward rotation, abduction and dorsal flexion. It is impossible for the foot to slide back into its old position. This bandage leaves free the entire thigh, the under part of the knee, and the entire inward aspect of the leg and ankle, with a certain possibility for movement in all the joints. These are all immense advantages. The child is allowed to go home for two days, and can be bathed if the leg is held up out of the water. After two days the physician removes the bandage, washes the leg with warm water and soap and massages the leg for a few minutes. A bandage is then applied, which is left for five days, and is then removed for an interval of four days. In the same way three more bandages are applied, each for a week. By the end of the fourth week the foot is in normal position, ready for the after-treatment. So far, the mother is not allowed to massage or work on the foot, but now she is taught to massage three or four times a day, seizing the leg above the malleolus, the sole toward her as she sits or stands in front of the reclining child. With the middle finger of the other hand on the little toe of the foot, she strokes the sole away from her. This one single simple movement combines the four compensating elements for clubfoot, continuing the pronation, extension, abduction and outward rotation of both foot and leg. With older children a rubber strap is applied afterward, passing around the foot and knee like the other, with a buckle to keep it fast, tied with tape to keep it from slipping off the knee.

101. **Abdominal Crises in Tabes.**—Pal supplements his previous communication on this subject, stating that determination of the tension in the vascular system may throw light on many obscure abdominal attacks. Especially instructive is examination of the abdominal aorta and observation of its behavior in such attacks; this may allow differentiation and thus obviate unnecessary surgical intervention. Many tabetics, he declares, have been operated on at the first crisis. He has found that the symptoms which Potain and Teissier have reported as characteristic for abdominal aortitis are in certain cases the initial symptoms of the abdominal vascular crises of tabes. These vascular crises in the abdomen may occur without pain. The vascular phenomena are evidently an important element in the syndrome of the crises in tabes. Abdominal and gastric crises may alternate. The arterial tension may increase by 50 and even 150 per cent. in the abdominal crisis; not so high in the gastric.

102. **Treatment of Old Fracture of the Patella.**—Wrede bridged a gap of 8 cm. ten months after fracture of the right

patella in a man of 39. The quadriceps was completely atrophied. A long tongue-shaped muscle-tendon flap was cut in the quadriceps, its base at the upper margin of the patella. This flap was turned over and drawn down into a cavity made to fit it in the front of the lower half of the patella, and fastened there and also to the ligament, to the periosteum of the tibia and the connective tissue in the gap. The bed of the flap was sutured together and a plaster cast was applied. By the end of four months the patient could bend his knee and use it almost normally.

103. **Experimental Basis for the Use of Bromids.**—Wyss reports research on animals which shows that the bromids accumulating in the blood drive out the sodium chlorid until there are serious symptoms from lack of the latter. The animals develop ataxia progressing to fatal paresis from the lack of salt—the symptoms being similar to those we are accustomed to regard as signs of bromid poisoning. In reality, the animals are suffering from the lack of sodium chlorid. The most interesting feature of these experiments is that it was possible by injection of salt, almost up to the last moment, to save the animals. They recuperated entirely in less than twenty-four hours with no signs of their previous derangement. He suggests that the symptoms observed in these experiments indicate that chlorin is of special importance for the undisturbed functioning of the motor nerve cells. Continuous administration of the bromids causes a considerable retention of bromin ions in the blood. An abnormally high concentration of salts in the blood is prevented by increased elimination of sodium chlorid. The resulting deficiency of chlorin leads to serious consequences, but they can be arrested by restitution of the missing salt. He applies his findings to the clinic, asserting that reduction in the proportion of chlorin in the blood is the effective principle in the treatment of epilepsy. This is accomplished by systematic administration of the bromids combined with a reduction in the amount of salt in the food, but no total abstention from salt except in urgent cases, and then only in the beginning. Bromism is merely the sum of the disturbances in the cell metabolism resulting from long deficiency of chlorin; it is not a specific consequence of administration of the bromids. He discusses the hypnotic action of the bromids, which he thinks has been exaggerated. He adds that an affection of mental origin is not to be influenced by the bromids; they only exert an injurious influence on the total metabolism. He thus regards them as directly contraindicated in neurasthenia and hysteria.

Münchener medizinische Wochenschrift

November 24, LV, No. 47, pp. 2417-2472

106 *New Principle for Maintaining Positive or Negative Pressure in the Lungs. (Zur Theorie und Praxis des Druckdifferenzverfahrens.) H. Brat and V. Schmieden.
107 Tuberculin Treatment in General Practice. John and Volhard.
108 *Diagnosis of Irregular Heart Action without Apparatus. (Diagnose der Herzunregelmässigkeiten ohne Kurvenaufnahme.) H. E. Hering.
109 *Simplified Measures to Ensure Obstetric Asepsis. (Einschränkung der aseptischen Massnahmen in der Geburtshilfe.) B. Krönig.
110 Dysmenorrhea. J. Veit.
111 *Spinal Anesthesia and Scopolamin. (Lumbalanästhesie und Dämmerschlaf.) G. Klein.
112 No Anatomic Grounds for Decline in Breast Nursing. (Eine Abnahme der Stillfähigkeit unserer Frauen aus anatomischen Gründen existiert nicht.) Walcher.
113 *Determination of Typhoid Bacilli in Stomach Content Containing Bile. (Nachweis von Typhusbazillen im gallenhaltigen Mageninhalt.) A. Weber.
114 Operative Treatment of Suppurative Meningitis with Suppuration in Internal Ear. (Operative Behandlung der eitrigen Meningitis bei Labyrinthelterungen.) Wittmaack.
115 Parabiosis of Rats of Opposite Sexes. (Parabiose von Säugetieren verschiedenen Geschlechtes.) B. Morpurgo.
116 Technic for Secondary Suture of Tendons. (Zur Technik der sekundaren Sehnennaht.) T. Kölliker.
117 *A New Aspect of the Pyrenol Question. (Die Pyrenolfrage—von einer ganz anderen Seite.) W. Straub.
118 Syphilitic Infection in Physicians. (Luetische Infektion bei Aerzten.) Heermann.

December 1, No. 48, pp. 2473-2520

119 Action of Solutions of Tryptic Ferment on Local Surgical Tuberculosis and Treatment of Suppurative Processes with Antiferment. (Einwirkung von tryptischen Fermentlösungen auf örtliche chirurgische Tuberkulose, und über die Antifermentbehandlung eitriger Prozesse.) G. Jochmann and W. Baetzner.
120 *Practical Importance of Serodiagnosis of Syphilis. (Praktische Bedeutung der Serodiagnostik bei Lues.) F. Bering.
121 *Serodiagnosis of Syphilis in the Cadaver. (Die Wassermannsche Reaktion an der Leiche.) E. Fraenkel and H. Much.
122 *Physiology and Pathology of Digestion in the Stomach. (Magenverdauung.) O. Cohnheim and G. L. Dreyfus.
123 Surgery of the Lungs. (Lungenchirurgie.) P. L. Friedrich. Commenced in No. 47.

106. **Maintenance of Intrapulmonary Positive Pressure.**—This communication from Bier's clinic describes an apparatus which is said to combine the advantages of the methods for positive and negative intrapulmonary pressure with a device for artificial respiration and insufflation of oxygen and an arrangement which permits anesthetization—all with the same apparatus, with or without a peroral tube. The apparatus is illustrated, and it is claimed that it is entitled to be regarded as an instrument of precision. One of its advantages is that, being used for so many different purposes, it is kept consequently in good order and many are familiar with its application, so that all is in readiness for emergencies. The principle on which the apparatus is based is that each respiration during intrapulmonary positive pressure is necessarily accompanied by more difficult expiration, and, consequently, that the overpressure in the lungs can be induced by merely rendering expiration more difficult. By preventing the free escape of air, the pressure within the lungs is kept high. Artificial respiration works better when the spontaneous respiration is arrested. Consequently the arrangement for maintaining artificial respiration is particularly useful when the spontaneous respiration is failing. The experiences with this apparatus have shown that it supplies a method by which the lungs can be kept inflated during the phase of expiration without at the same time preventing the retraction of the lung necessary to keep up the spontaneous ventilation. An adjustable spring valve regulates the amount of air expired. All methods for inducing positive and negative intrapulmonary pressure should be regarded more from the technical and surgical than from the physiologic standpoint, as none approximates physiologic conditions.

108. **Diagnosis of Irregular Heart Action Without Tracings.**—Hering reviews his five types of irregular heart action—1, irregularis respiratorius; 2, extrasystolicus; 3, irregularis perpetuus; 4, transmissorius; 5, alternans—and here gives the diagnostic physical differentiating points for each. He remarks that our knowledge of cardiac arrhythmia has made remarkable progress during the last ten years. The physician who has not made a study of these five types of irregular heart action deprives himself of an important aid for differentiation of the condition before him, as well as for treatment and prognosis. It is especially important to differentiate the first two of these types, which are comparatively harmless, from the third and fifth types. The prognosis for the third type—absolute irregularity—is grave, as no treatment is yet known which will cure it; the dissociation can be arrested only when it is of syphilitic nature. The fifth type, pulsus alternans, is the more severe the slower the heart action and the smaller the lesser systole. If the physician is unable to differentiate the second from the fourth of these types, he may give drugs which are directly contraindicated in the case in question. He shows how the differentiation of these various types, even without tracings, is not difficult, but the physician is liable not to be able to convince others without the objective records.

109. **Restriction of Measures to Insure Asepsis at Childbirth.**—Krönig declares that there is no necessity for such extreme attempts to realize asepsis in a normal obstetric case as others insist on. The results at his clinic bear out his statements that in a normal childbirth all that is necessary is to refrain from adding to the stock of germs already on hand. His three maxims are: No disinfection of the genital region. No necessity for disinfection of the hands of the person conducting the case. Full appreciation of the importance of the local and general predisposition for the development of infection. He presents arguments to show that the natural secretion of the vagina will take care of the local germs, and that scrubbing the external parts is liable to introduce more germs into the vagina. He trains his students to make their examination through the rectum, confi-

dent that information sufficient for all obstetric purposes can be thus obtained. He has never witnessed any injury from rectal examination, and it causes no pain to the parturient if she is asked to strain a little as the finger is introduced. The finger is protected from soil by rubber gloves or a rubber cot with flaring base. The rectal examination spares the patient and the obstetrician the necessity for disinfection. The only time when actual contact is necessary is during the maneuvers to protect the perineum. For this he wears mittens of stout, thick rubber cloth, recently boiled. In case an operation is required, these principles cease to apply; the woman is shaved and disinfected and the operator disinfects his hands as for a major operation anywhere. In 705 normal deliveries the morbidity has been 5.96 per cent. since he has been applying these principles. All these patients were allowed to get up the first day.

111. **Spinal Anesthesia and Scopolamin-Morphin.**—Klein relates his experiences with these technics, saying that spinal anesthesia has proved most useful in his hands, especially when combined with the scopolamin-morphin technic. He believes that the aftereffects of chloroform have been underestimated, and that it is responsible for many fatalities from the third to sixth day, which have been ascribed to shock or other cause. He regards spinal anesthesia as neither easy nor free from all danger, but says that it has a wide field in case of degeneration of the heart, in cachexia, anemia and affections of the respiratory organs. It has proved especially useful in some cases of coincident degeneration of the heart, anemia and nephritis. Its benefits are striking for myomotomy. He does not approve of spinal anesthesia for minor or brief operations nor for vaginal operations as the sympathetic is not anesthetized. It is important to have the patient sit up for five or ten minutes to allow the anesthetic to lave the roots in the lumbar region in operations on the genitals or laparotomies. One great disadvantage of the lumbar technic is the occasional stiffening of the abdominal wall, but this can be remedied with a few whiffs of chloroform. He remarks that the dose of 0.0008 gm. of scopolamin is too high for some patients on account of its action on the heart, and he advises individualization even with this technic. After the first injection of scopolamin a trained nurse should watch over the patient continuously, and the second injection should be made only when the pulse is full and slow, but in every case he repeats the injection of 0.01 gm. morphin. It is important to refrain from speaking in the presence of the patient, even during the operation. Combination of this technic with spinal anesthesia and chloroform permits long major operations, such as abdominal hysterectomy for cancer, even in the severest cachexia and degeneration of the heart. He has applied this in 77 cases, and is convinced that the danger from the anesthesia is much reduced by this combination. The "twilight sleep" and spinal anesthesia form a combination whose results are evident in the behavior of the patients after the operation. They partly sit up in bed, converse and seem lively, in marked contrast to the patients after chloroform anesthesia. The aspect of the ward is entirely transformed.

113. **Typhoid Bacilli in the Stomach Content of Bacillus Carriers.**—Weber has found that it is possible to cultivate typhoid bacilli from the stomach content of a chronic bacillus carrier when the urine and stools are sterile; the only condition is that the stomach content contains admixture of bile. He has the patient drink 200 c.c. of oil, and pumps out the stomach content half an hour later. The layer of oil on top contains the bacilli in large amounts, and they are evident for two days. Besides two chronic bacillus carriers tested, he obtained positive results from a paratyphoid carrier.

117. This article will be discussed in the Pharmacology Department.

120. **Serodiagnosis of Syphilis.**—Bering reports application of the serum test in 896 cases, the results confirming anew its reliability. He prefers the simpler Bauer technic to the Wassermann method. It was described in detail in the *Deutsche med. Wochenschrift*, April 16, 1908, page 699.

121. **Serodiagnosis of Syphilis in the Cadaver.**—This communication from the great Hamburg public hospital fills a gap in our knowledge of the serodiagnosis of syphilis as the findings in the cadaver had not been extensively studied. The findings all confirmed the clinical verdict during life, although the investigator examining the serum was not acquainted with the case history at the time. The only discordant note was that scarlet fever cadavers gave also a positive response. This has little practical, but much theoretical interest.

122. **Gastric Digestion.**—Cohnheim's experimental and clinical experience has convinced him that in certain cases the disturbances ascribed to the stomach are in reality of intestinal origin. The stomach symptoms are the result of reflex action from an affection farther along in the digestive tract. He found it possible to induce gastric symptoms in dogs merely by acting on the small intestine.

Therapie der Gegenwart, Berlin

December, XLIX, No. 12, pp. 529-576

124 Occurrence of Non-Specific Serum Reactions. (Zustandekommen unspezifischer Serumreaktionen.) M. Jacoby.
125 Indications and Technic for Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. (Indikationen und die Technik des künstlichen Pneumothorax bei der Behandlung der Lungenschwindsucht.) C. Forlanini. Commenced in No. 11.
126 *Importance of Adsorption for Therapeutics. (Bedeutung der Adsorption für die Therapie.) L. Lichtwitz.
127 What Institutions Shall Care for Wage-Earners Suffering from Neuroses? (In welchen Anstalten sollen die an Neurosen Leidenden der weniger bemittelten Klassen behandelt werden?) S. Auerbach.
128 Sydenham's Treatment of Gout in Light of Recent Research. (Sydenhams Behandlung der Gicht im Lichte neuerer Untersuchungen.) F. von den Velden.
129 Treatment of Rachitis. J. Hoppe.

126. **Importance of Adsorption in Therapeutics.** Lichtwitz reports research on the adsorbing power of bolus alba, charcoal, bismuth, talcum, etc., that is, their property to take up acids, ferments, toxins and the like. The practical results are that adsorbing substances may be given to aid in taking up the toxins in the digestive tract, especially in pernicious anemia and autointoxication of gastrointestinal origin, in which these adsorbing substances will help to carry off the toxins from the parts of the gastrointestinal canal inaccessible to lavage. The adsorbing action is of course greater the larger the adsorbing surface. It is also larger the greater the dilution of the toxins. Prompt evacuation of the adsorbing substance should be provided for.

Wiener klinische Wochenschrift

December 3, XXI, No. 49, pp. 1691-1726

130 Resection of Eyeball. (Resektion des Augapfels.) L. Müller.
131 *Allowing Patients to Get Up Soon After Surgical Operations. (Aufstehen nach chirurgischen Operationen.) K. Büdinger.
132 Protective Inoculation Against Hydrophobia. (Ueber das Lyssavirus "Fermi," über Schutzimpfung mit normaler Nervensubstanz, und über Wirkungen des rabiziden Serums.) R. Kraus and Fukuhara.
133 *The Cutaneous Tuberculin Reaction in the New-born. (Kutanreaktion bei Neugeborenen.) O. Bondy.
134 *Anthrax and Its Prevention. (Die Milzbranderkrankungen und deren Verhütung.) H. Kokall.
135 *Treatment of Syphilis on Basis of Latest Research. (Die Spirochaete pallida und die klinische Forschung, nebst Betrachtungen über Syphilistherapie auf Grund der jüngsten Forschungsergebnisse.) E. Lang. Commenced in No. 48.

131. **Allowing Patients to Get up Early After Operations.**—Büdinger thinks it necessary to keep patients in bed after most abdominal operations, including hernias, till toward the end of the second week, as a rule. The exceptions are the patients with a tendency to pneumonia, especially the aged and infirm. The danger of pneumonia is the greater, the nearer the field of operation to the diaphragm. The most dangerous in this respect is gastrotomy for cancer of the esophagus. Such patients should always be got out of bed on the very day of the operation. When the expectoration is ample and the danger of pneumonia seems past, the patient can be allowed to stay in bed.

133. **Cutaneous Tuberculin Reaction in the New-born.**—Bondy applied the test in 350 cases to both mother and child, between the second and fourth days after delivery. A positive response was obtained in 71 per cent. of the mothers,

but in the infants the test always gave negative findings. Similar tests with diphtheria toxin in 50 cases resulted in a positive response in 30 per cent. of the mothers, but constant negative findings in the infants.

134. **Prevention of Anthrax.**—Kokall states that anthrax is becoming more and more prevalent at Brünn, notwithstanding elaborate disinfecting measures in the factories using imported hair and rags. He pleads for legislation compelling disinfection before importation. The disinfection might be done at the port of entry, or a certificate of thorough disinfection beforehand might be required before admitting the goods.

135. **Syphilis.**—Lang presents evidence to show that the treatment of syphilis should be more like the natural process of immunization. Large doses and brief courses of treatment do not give such favorable results as smaller doses and continuous treatment, supplemented by hygienic measures. He shows that the course of the syphilis corresponds to a formula including the syphilis virus, S; the constitution, K, of the individual, and the external circumstances, n + t. The last element, n + t, is the influence of non-therapeutic and therapeutic factors. The formula thus shows the variability in the course of syphilis, as these inconstant elements vary so widely. He expresses it thus: $v = F(S,K[n+t])$. His method is to give one mild mercurial pill and increase by one a day until 6 are being taken, repeating this dose for two weeks, then reducing by 1 pill every two days to 3 pills, and continuing this dose for two or three months, then 2 pills for the same length of time, then 1 pill. This mild preventive course requires five or six months, and the patient should be kept under supervision throughout. The best results are obtained when the treatment is begun not less than ten or twelve days after infection. Some of his patients thus treated have contracted new infection, with typical local and general phenomena. Lang believes that the organism is able to cope with the infection unassisted, to a certain extent, and that the biology of the spirochete explains the superior advantages of this mild, continuous method of treatment.

Zentralblatt für Chirurgie, Leipsic

December 5, XXXV, No. 49, pp. 1457-1488

136 Changes in Blood in Consequence of Operations. (Aenderungen im Blutserum infolge von Operationen.) G. Bolognesi.

December 12, No. 50, pp. 1489-1520

137 *Absorbability an Essential Factor in the Catgut Question. (Abstufung der Resorbierbarkeit ein Wesentliches in der Catgutfrage.) F. Kuhn.

137. **Absorbability of Catgut.**—Kuhn has catgut treated with iodin before it is twisted, as described in these columns Aug. 10, 1907, page 529. Catgut thus treated is tough like leather and does not soften for weeks, so that it remains in the tissues comparatively unmodified for from 25 to 40 days. When it finally softens it dissolves as candy does in the mouth. Before it softens it remains passive, non-irritating, in the tissues, like wire. In selecting catgut, therefore, the absorbability should be regarded; the deeper the suture, the more important to have the catgut non-irritating and comparatively durable.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

BLACK-WATER FEVER. By Captain S. R. Christophers, M.B., I.M.S., and Dr. C. A. Bentley, (Officers on Special Duty). No. 35, of Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, being the First Report of the Advisory Committee Appointed by the Government of India to Conduct an Inquiry Regarding Black-Water and Other Fevers Prevalent in the Duars, Boards. Pp. 239. Simla: Government of India Monotype Press, 1908.

SURGERY OF THE UPPER ABDOMEN. In Two Volumes. By John B. Deaver, M.D., LL.D., Surgeon-in-Chief to the German Hospital, Philadelphia, and Astley Paston Cooper Ashhurst, M.D., Surgeon to the Out-Patient Department of the Episcopal Hospital, Philadelphia. Vol. I: Surgery of the Stomach and Duodenum. Cloth. Pp. 468, with Illustrations. Price, $5. Philadelphia: P. Blakiston's Son & Co., 1909.

PHRENOLOGY. By J. G. Spurzheim, M.D., of the Universities of Vienna and Paris, and Licentiate of the Royal College of Physicians of London, with Introduction by Cyrus Elder. Revised from Second American Edition (Boston, 1833). Cloth. Pp. 459. Price, $3. Philadelphia: J. B. Lippincott Co., 1908.

INFLUENCE OF FOOD PRESERVATIVES AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH. U. S. Department of Agriculture, Bureau of Chemistry, Bull. No. 84, Part V: Formaldehyde. By H. W. Wiley, M.D. Paper. Washington: Government Printing Office, 1908.

INFANTS' MILK DEPOTS AND THEIR RELATION TO INFANT MORTALITY. The New York Milk Committee of the New York Association for Improving the Condition of the Poor. Paper. Pp. 80. Price, $0.50. New York: The Nation Press, 20 Vesey St.

TRANSACTIONS OF THE SIXTEENTH ANNUAL MEETING OF THE HAWAIIAN TERRITORIAL MEDICAL SOCIETY, held in Honolulu, November, 1907. Paper. Pp. 88. Honolulu: Hawaiian Star Print, 1908.

APPLIED PHYSIOLOGY. By Robert Hutchinson, M.D., F.R.C.P., Physician to London Hospital. Cloth. Pp. 298. Price, $2. New York: Longmans, Green & Co., 1908.

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH OF THE TERRITORY OF HAWAII FOR 1908. Paper. Pp. 150. Honolulu: Bulletin Publishing Co., 1908.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year Ended June 30, 1907. Vol. II. Cloth. Washington: Government Printing Office, 1908.

JOHN MONTCALM, HERETIC. By Frederick A. Rupp, M.D. Cloth. Pp. 272, with Illustrations. Price, $1. Reading, Pa.: I. M. Beaver, 1908.

New Patents

Recent patents of interest to physicians:

904677. Electric-current bathing tub. F. Braun, Dresden, Germany
904760. Surgical appliance. M. R. Cutting, Seattle, Wash.
904942. Urinary apparatus. V. De Incognito, Chicago, Ill.
904515. Invertible atomizer. T. A. De Vilbiss, Toledo, Ohio.
904779. Vaccinating needle. C. H. Higgins, Ottawa, Ont., Canada
904615. Pasteurizing and sterilizing apparatus. C. E. Hinman, Council Bluffs, Iowa.
905083. Putting up antiseptic bandages. J. E. Lee, Conshohocken, Pa.
905087. Atomizer. H. H. Mallory, Chicago, Ill.
904362. Vibratory apparatus for ear treatment. E. Meyer, New York.
904986. Pasteurizing apparatus. A. A. Pindstofte, Frederiksberg, Denmark.
905007. Surgeons' needle holder. A. F. Sether, Glendale, Oregon.
904739. Disinfectant distributor. J. O. Walker, Burlington, Iowa.
905032. Spray nozzle. A. S. Washburn, Germantown, N. Y.
904587. Invalids' bed. E. A. Wible, Eureka, Cal.
905633. Nose-piece for microscopes. E. Bausch, Rochester, N. Y.
905296. Spray-head for atomizers. T. A. DeVilbiss, Toledo, Ohio.
905301. Surgical device. J. H. English, Farmington, Mo.
905415. Manufacturing ammonia. F. W. Frerichs, St. Louis, Mo.
905705. Supporter. N. Johnson, Grove City, Minn.
905197. Atachment for syringes. C. L. Loffler, Sioux Falls, S. D.
905372. Cushioned joint for artificial limbs. J. F. Rowley, Chicago, Ill.
905602. Dehydrating moist chlorin. E. A. Sperry, Brooklyn, N. Y.
906188. Rendering carbohydrates soluble. A. Boidin, Seclin, France.
906207. Obtaining curative animal serum. R. H. Deutschmann, Hamburg, Germany.
906435. Inhaler. W. L. Knapp, Marietta, Ohio.
905890. Truss. F. A. Lane, Manchester, N. H.
905937. Disinfecting apparatus. M. Schnaier, New York.
905943. Preparation of casein. E. Soncini, Milan, Italy.
906081. Production of ozone. J. Steynis, New York.
906468. Production of ozone. J. Steynis, New York.
906084. Remedy for poison oak-rash. A. Terzich, Sonora, Cal.
906085. Dermatological instrument. A. L. Tolman, Orange, Mass.
906350. Truss. J. H. Windisch, Toledo, Ohio.
39683. Design, Medicine-dropper. O. F. Hall, Chicago, Ill.
906845. Wheeled crutch. J. W. Adair, Marion, Ohio.
906504. Capsule filler. P. H. Brown, Temple, Texas.
906772. Massaging implement. G. H. Coates, Worcester, Mass.
906694. Manufacturing a medicament. H. W. Davis, Weatherford, Texas.
906711. Syringe. H. M. Hill, Dallas, Texas, and C. O. Farrington, Chicago, Ill.
906918. Making neutral Oxychinolin salts. L. Ostermann, Hamburg, Germany.
907090. Tonsilotome. R. H. Rice, Milwaukee, Wis.
906975. Apparatus for the sterilization of liquids. H. J. Wessels, Paris, France.
39688. Design, Medicine-dropper and stopper. O. F. Hall, Chicago, Ill.
907319. Fumigator. H. W. Curtis, Chicago, Ill.
907331. Surgical package. F. P. Gates, J. D. Cogswell and H. L. Grant, Manteo, N. C.
907146. Artificial limb. H. Hanger, Washington, D. C.
907377. Vibrator. H. Larsen, Springfield, Ohio.
907263. Truss. I. Meissl, Cleveland, Ohio.
907388. Bandage. R. K. Morris, Fresno, Cal.
907392. Aspirator. C. W. Nance. Sydney, New South Wales, Australia.
907639. Pasteurizing apparatus. J. T. H. Paul, Chicago, Ill.
907178. Nasal inhaler. A. Riggs, Cincinnati, Ohio.
907290. Nursing waist. C. Rouff, New Orleans, La.
907294. Dose indicator. J. H. Scott, Winston Salem, N. C.
907192. Ankle-joint for artificial limbs. M. Spring, Oakland, Cal.
907536. Toe-Stretcher. G. Sperzel, Philadelphia, Pa.
907428. Manufacture of camphol esters. A. Verley, Paris, and E. Urbain and A. Felge, Gentilly, France.
907664. Manufacturing dialkyl barbituric acid. O. Wolfes, Darmstadt, Germany.
907665. Manufacturing barbituric acid. O. Wolfes, Darmstadt, Germany.